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SYSTEM

OF

POSITIVE POLITY

BY

AUGUSTE COMTE

AUTHOR OF 'SYSTEM OF POSITIVE PHILOSOPHY'

FIRST VOLUME

CONTAINING THE

GENERAL VIEW OF POSITIVISM & INTRODUCTORY PRINCIPLES

LONDON

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1875

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REPUBLIC OF THE WEST.

Order and Progress—Live for others.

SYSTEM OF POSITIVE POLITY,

OR

TREATISE ON SOCIOLOGY,

Instituting the Religion of HUMANITY;

By Auguste COMTE,

Author of '*System of Positive Philosophy*'

The principle, Love;
The basis, Order,
The end, Progress.

FIRST VOLUME,

Containing the GENERAL VIEW OF POSITIVISM & INTRODUCTORY PRINCIPLES.

PARIS
L. MATHIAS, & CARILIAN-GOEURY and Vor DALMONT,
&c. &c.
July 1851.
Sixty-third year of the great revolution.

NOTICE.

This volume was published by the Author in July 1851.

It has been translated by JOHN HENRY BRIDGES, M.B. Oxon., Inspector of the Local Government Board.

The Marginal Notes and the Table of Contents have been added by the Translator.

The 'General View of Positivism,' originally published and afterwards translated as a substantive work, has been thoroughly revised for this volume.

PREFACE.

Qu'est-ce qu'une grande vie?
Une pensée de la jeunesse, exécutée par l'âge mûr.
ALFRED DE VIGNY.

THE principal title of this treatise is identical with that given in 1824 to the second edition of the fundamental Essay, which, when published under another name two years before, had marked the definite opening of my philosophical career. That career is thus seen to be homogeneous throughout; the end being clearly aimed at from the first. And this will be shown still more clearly by the reprint of all my earlier publications at the end of the fourth volume of this treatise; these having been long withdrawn from circulation, or buried in serials deservedly forgotten.

On the other hand, the length of time that elapsed between the conception of my political philosophy and its completion shows that my first conception of the intellectual conditions required for this great renovation was not sufficiently precise. It seems desirable therefore to develop the remarks contained in the preface to the sixth and last volume of my System of Positive Philosophy upon this point.

I showed then that the crucial discovery of sociological laws made by me in 1822 gave me, at the age of twenty-four, true cerebral unity, by effecting complete convergence of the two sets of tendencies, scientific and political, which till then had divided my attention. Conscious that I had myself gone through the encyclopædic training required for my social

mission, I was forced on in the zeal of renovation to the immediate construction of the doctrine by which the vast revolution of the West was to be ended. In 1826 appeared my work on the spiritual power, which clearly marked out as the great object of my life the establishment of a speculative authority adequate to superintend the entire reconstruction of principle and practice, assuming in fact the function exercised by Monotheism before its decay. Thus closed my seven years' novitiate, begun in 1820 by my first attempt to co-ordinate modern history.

The close of this period led me to a sounder view of the principal obstacle to the realisation of the projected synthesis. I perceived that the new faith needed in all systematic minds a scientific foundation corresponding to that which I had myself painfully acquired, and which I had at first thought the public might have been spared. It followed from my own law of the hierarchy of sciences that Social Philosophy could not assume its true character, and make its full weight felt, except so far as it was seen to rest on the general results of Natural Philosophy as partially worked out during the last three centuries. This problem of direct reconstruction of the spiritual power started a train of continuous thought lasting for eighty hours; the result being the conception of a complete systematisation of Positive Philosophy as a necessary preliminary to the task. This work was set on foot in a course of lectures begun in the same year, 1826.

Such then was the result of this decisive crisis, which was speedily followed by serious cerebral disturbance. The great work which I had first supposed to be undivided, branched out into two successive undertakings, the one mental, the other social in purpose. In the first, Sociology would appear as the last term in the laborious series of enquiries which began with Thales and Pythagoras, and which in Bichat and Gall had reached the threshold of the ultimate domain of Positive thought. The next task would be to construct upon the firm basis thus raised the new faith of Western Europe, and to institute the priesthood of the future. In a word, the goal of

positive Science would be a sound Philosophy capable of supplying the foundation of true Religion.

Moreover, it was essential that both stages of this exceptional career should be elaborated by the same organ of Humanity: otherwise their adaptation would have been imperfect. The first phase, retarded by personal and material difficulties, occupied me till the age of full maturity. At its close in 1842, I gave a distinct intimation of the second work, the preliminary outline of which was published six years afterwards. The present treatise of Positive Polity, following upon that of Positive Philosophy, and necessarily based upon its results, is thus the most important of my works.

This realisation of the bold project of my youth is the best reward of my persistent efforts. The same regenerating tendencies that kindled the zeal of my youth inspire now not a whit less vividly or deeply the later years of life. I regard the long speculative enquiry which has occupied the interval simply as a necessary episode in the exceptional part assigned to me by the evolution of Humanity.

Closely connected though they be, these two treatises will therefore exhibit essential differences. Speculative considerations predominate in the first, the object being to show the intellectual superiority of Positivism over all forms of Theology. But in the present treatise, where the moral excellence of true Religion is illustrated, Feeling takes the first place. The disastrous revolt of Reason against Feeling will never be terminated till the new Western priesthood can fully satisfy the claims of modern Intellect. But this being done, moral requirements at once reassume the place that belongs to them; since in the construction of a really complete synthesis, Love is naturally the one universal principle.

The difference in the character of the two works shows itself in the mode of exposition. The process of extracting from the dispersed materials of science the elementary principles of a sound philosophical system involved a procedure of investigation and discussion. But the presentation of the universal

religion in a systematic form upon principles already reached, allows of a nearer approach to a more satisfactory mode of exposition, in which conviction is the result not so much of controversy as of solitary reflection. The greater vivacity and originality of the first work is compensated by the more imposing regularity and constructive completeness of the second.

These differences of form correspond to a profound logical diversity between the two treatises, springing from the special nature and purpose of each. In the first, where the process of scientific preparation is carried to its furthest limit, I have carefully kept the objective method in the ascendant; as was necessary where the course of thought was always proceeding from the World in the direction of Man. But the fulfilment of this preliminary task, by the fact of placing me at the true universal point of view, involves henceforth the prevalence of the subjective method as the only source of complete systematisation, the procedure now being from Man outwards towards the World. Thus the higher logic under which Man's primitive belief arose adapts itself, when regenerated by Positivism, to his final constructions. Its ultimate position is indicated in the principle of the ascendancy of the heart over the intellect.

When, in the course of my long objective enquiry, I passed in 1836 from Cosmology to Biology, I at once saw that the exclusion on scientific grounds of the subjective method could only be provisional; and my first chapter on Biology showed a glimpse of the final harmony between the two logics. The systematic predominance of the social point of view established in that work prepared the way for this result, which in the present volume is directly established.

It is on this conclusion of my Positive Philosophy that my religious construction is founded; its first work being to regenerate the scientific conceptions from which it arose. This is the special object of that part of this first volume which follows the General View. Encyclopædic unity thus organised, the second volume, dealing with Social Statics, will contain the principal synthesis: that is to say, the abstract theory of human Order,

representing implicitly the whole order of the world. The third volume proceeds to the subject of Dynamic Sociology, dealing with the general course of human Progress, which can always be shown to be the gradual development of Order. The fourth volume, containing the most essential applications of the doctrine, institutes more specially Positive Religion, presenting it as the result of the evolution of human nature in the past. It prepares the way for its establishment by organising the period of transition immediately preceding it.

As for the three other works which were announced in the conclusion of my Positive Philosophy as coming next in order, the ten years of full mental vigour which remain before the time of retirement arrives, will suffice, I venture to think, for their completion, if circumstances prove sufficiently favourable. But as the unflagging persecution of French pedantocracy which has harassed me for seven years may make this result impossible, I have determined to deal at once with these three accessory subjects where they touch upon my principal work, though without interfering with their further development. If possible I shall write in the first instance the two volumes of mathematical philosophy; then the volume on universal education; and finally that on the systematic action of Man upon the world.

After this general statement of the procedure adopted in this treatise, and of its connection with that which precedes and with those which are to follow it, I must explain the circumstances personal to myself which have enabled me to lead two philosophic lives of such different character. It is accounted for by two intellectual influences, one involuntary, the other voluntary; and by the rare moral renovation wrought at the right moment by a purified passion.

First among the conditions enabling me to accomplish a double task, either part of which seemed enough for a single life, is to be noted the precocity of my earlier work. Emancipated from theology before the end of childhood, and trained betimes in positive studies, I passed rapidly through the meta-

physical period. At the age of twenty-two my philosophical career was opened by a work on the co-ordination of history, and two years afterwards my discovery of sociological laws irrevocably fixed its course.

Yet this precocity would have been insufficient for my second life but for my energetic resolution to discard all considerations of literary excellence, with the view of finishing my formidable objective tasks in time. It occupied me twelve years, but it would have taken at least six more if I had forced myself, as I had done previously, to rewrite my manuscript instead of sending my first draft to the press without ever correcting it in any important respect. Had I done this, the Positive Philosophy would have been spared most of the strictures received from judges who have omitted to remark the explanations in the preface to the last volume. My earlier publications, reprinted in the last volume, will show whether I am wholly devoid of literary skill when I conform to the usages required for the completeness of style. But this would have involved the delay of my second career till an age too late for its proper development. It may be added that the moral influence of which I have to speak would have come less opportunely. The dedication of a life so specially renewed to the direct object of Western reorganisation claimed from me, therefore, this abnegation of literary honours. I am sufficiently aware, however, of the extent to which philosophic conceptions may gain by clearness of expression, to endeavour to give them this additional value should the leisure of retirement permit me some day to revise the work in question, without, however, interfering with its originality. In the present work, where the need for rapidity was naturally less imperious, though I have not adopted the inconvenient practice of rewriting, more attention has been paid to the style.

But though time for my second career was thus provided, I stood yet in need of some deep and sustained impulse enabling me to avail myself of this leisure to the full. My intellectual powers, wearied with their long objective toil, were inadequate to

the construction of a new system from the subjective point of view, directed, as in earlier life, by a social rather than an intellectual purpose. A new birth of the whole moral nature was needed. And this was given me six years ago by the incomparable angel appointed in the course of human destiny to transmit to me the results of the gradual evolution of our moral nature.

To estimate this sacred influence rightly I must recall the exceptional circumstances which had hitherto denied me all adequate moral training, notwithstanding the sympathetic nature due to an admirable mother. Withdrawn in early childhood from the ordinary current of home feelings by our disastrous system of public schools, I was artificially urged on to a speculative life for which my nature was but too readily inclined. With manhood came a new and more fatal obstacle to my moral progress from the very course which I had chosen to repair these involuntary shortcomings, the gravity which I already knew. While this deplorable situation lasted (and it was not for me to end it), I was hopelessly cut off from any affection that could satisfy the heart. It ended finally at the very time when I was finishing my Philosophical Treatise. Two years of indispensable calm followed; and it was then open to me to accept a less negative form of happiness, which indeed was necessary to the great work of my life.

Yet these inward feelings, the energy of which was proportionate to their long restraint, would not have sufficed for my regeneration had they been devoted to a less worthy object. Victim of a similar fatality, but more unhappy, and far more spotless, than I, placed therefore in a position of even more unquestionable freedom, Madame Clotilde de Vaux was the source from which I was at last initiated in the highest human emotions. Untainted purity gave stability to our affection, and this, during one incomparable year of objective union, was the principal instrument in my moral resurrection. My subjective adoration differs then from the former mode only by being more continuous and tender, though less vivid. In this final stage of our identification I am constantly led to feel the reality and

the depth of a casual expression in one of her sacred letters: '*The one irrevocable thing in life, is Death.*'

The time is not yet come for explaining the grounds on which I place her above all women that I have read of in the past, have seen in the present, or can conceive in the future. Five years of objective separation are not enough as a guarantee to the public of impartiality in a judgment the materials for which are not yet accessible.

Yet her first publication, here reprinted, may give some indication of the moral service which her talents might have rendered to humanity. I regret not to be able to produce a longer manuscript, the one legacy left me on her death-bed, which in spite of the expressed wish of a conscientious father, was withheld from me by her family. Thus the moral and mental value of this admirable nature can only be judged by its permanent consequences upon my own work. All those who have formed a sound judgment of the recent progress of Positivism may now judge, by comparing the past with the present, of the impulse that has been given to the full development of my philosophical task; consisting in the entire systematisation of human life on the basis of the preponderance of the heart over the intellect. It is as the result of these new services that this cherished name will become inseparable from mine in the most distant memories of grateful humanity. The loving duty which Dante so well fulfilled for Beatrice is more deeply incumbent on myself for obligations far more stringent.

When it has been accomplished by bringing my arduous tasks to a close, it may perhaps be permitted me in the leisure of declining years to enable others personally to appreciate the angelic being who inspired me in the vigour of manhood. The faithful reproduction of our correspondence will give, I think, after what has been said, all the weight which such a narrative may require. Throughout this long series of unreserved communications one feeling predominates; on the one side, constant renewal of thankfulness for my gradual regeneration; artless anxiety on the other, lest this affection should

involve disturbance of my work. Notwithstanding all my explanations, this touching scruple recurs even in her last letter: 'I ask myself if some day you will not call me to account for bringing these violent agitations into your public life.' Therefore it is that my principal regret will always be that she could not witness in its full development the immense progress made by Positivism under her immortal influence. Yet the first advance coincided with the beginning of my joy; as may be seen in my philosophic letter[1] of June 2, 1845, the publication of which will indicate the earliest private source of the new positivist inspirations.

From this point onwards all the ideas and the maxims for which I have found most acceptance have been inspired by this inward worship. The sacred harmony between public and private life, which will become the practical privilege of Positivists, was first to be developed in myself. Before the end of my year of mourning it affected strongly the course of lectures delivered in 1847, in which the new philosophy appeared in the full dignity of a complete and final religion. The systematic treatise which appeared in the following year points to all the subsequent developments of religious positivism. Its principal theory was elaborated in the important lecture at which I had ventured to solemnise the first anniversary of my eternal widowhood by enunciating the true position of women.

These few indications may suffice to show how well merited is the Dedication which follows this Preface. To minds unprepared for it my gratitude may seem exaggerated. My own fear, on the contrary, is that it falls too far below the immensity of the benefit. For this public avowal, the only channel in which my grief then rendered it possible for my new meditations to flow, was written before the chief philosophical results of my moral regeneration had appeared. And since these results have happily surpassed the hopes which were thus inspired by their first germs, it may well be that the expressions of my gratitude would be stronger now than they were five years ago. Never-

[1] See Appendix.

theless I thought it right scrupulously to respect the spontaneousness of this record, in which readers prepared for it will find the best positivist inspirations in their earliest stage. What may be still wanting to explain the full religious influence exercised by my Saint Clotilda, will be easily supplied by a careful comparison of my second career as a whole with my first. The contrast in the respective Dedications is significant in this respect. My philosophical work was dedicated to the two most prominent names in cosmological and biological Science. My religious construction comes out now under the sole auspices of a young lady who died five years ago, unknown and oppressed by poverty.

To explain the character of my moral renovation I must guard against a supposition which in the present day might easily be formed, that my affections were stirred in one direction exclusively. Those who know how all the generous instincts are knit together will learn without surprise that this pre-eminent affection, far from weakening my other feelings of love, rekindled and strengthened them by rallying them strongly to one centre. I may here specify the two principal instances; one referring to circumstances preceding my regeneration, the other being subsequent to it.

A noble and tender mother, whom I lost fourteen years ago, was the first real source of all my essential qualities, not merely of emotions, but also of practical and even of intellectual capacities. Nevertheless I have now humbly to confess that I never felt for her that love which her worth and her sorrows claimed; and that even what love I felt was never sufficiently shown, owing to the false shame of seeming too fond which is stimulated by modern training. But the worship of my Clotilda has at last aroused in me veneration for my honoured mother. Her image and that of Rosalie de Boyer are more and more intimately mingled, both in my weekly visit to the cherished tomb, and in my daily prayers. These two angels thus harmoniously directing the beginning and the close of my moral initiation, will be, I hope, for ever united in the commemoration of my service to humanity. Their common adoration shows the happy

tendency in my religion of the central feeling to spread to other objects worthy of union with it. Here alone can I find expiation for my faults as a son, and strength to avow those faults in public. In addition to these two subjective sources of strength, I must speak of the objective influence daily received from a remarkable woman belonging to the working class, who has deigned to devote herself to my material service without imagining that she was showing me an admirable type of moral perfection. Her fortunate inability to read only brings out more strikingly not merely the excellence of her feelings, but also the clearness and penetration of her mind, which has made good use of all the teaching afforded by a wise womanly experience. In her care for me she revives unconsciously the moral influence of the two other angels, by offering a beautiful and permanent example of the normal state of man, the free play of activity and thought in subordination to feeling. Were there fewer obstacles to legal adoption, I should now have no hesitation, after an experience of ten years, in publicly accepting Sophie Bliot as the daughter of my choice. Although this satisfaction is denied me, all right-judging people will recognise my intention as morally equivalent to it, and my gratitude will receive the sanction of posterity. She whom my sainted friend cherished as an admirable sister would also have gained my pious mother's heart.

The combination of these three beautiful womanly types is a special incentive to the culture of the three sympathetic instincts, attachment between equals, veneration for superiors, kindness to inferiors. Thus the affections of my daily life are a strong confirmation of my conception of the true constitution of society, in which the maintenance of order depends on the twofold relations of philosophers with women and with proletaries.

Were I writing the history of my life I should refer to other influences of a less direct or more abstract kind, which, combined with the threefold moral impulses above mentioned, favoured the progress of my thoughts towards the synthetic state required for my new work. I should explain the effect of

artistic instincts, the paralysis of which had followed that of my moral nature, but which were revived before it, so soon as my philosophical system had advanced as far as Sociology, and had taught me to comprehend first the fine arts in themselves, and subsequently the emotions of which they are the expression. But in these remarks I must confine myself to an indication of the source from which the new character of my public life is derived; giving thus a guarantee of its permanence, and also a justification of the gratitude due for so important a change. In a time when the value of intellectual power is so much exaggerated, it was but honest to prevent others from attributing to my mental qualities what is principally due to the heart. I have now only to speak of those influences which have concurred in the general result by stimulating character; that is to say, energy, perseverance, and even prudence. I refer first, to the noble support given me by the advanced part of the Western public; and secondly, to the confidence inspired by the phase through which the great revolution is now passing.

Ten years ago, in the fifth volume of my Philosophy, I made the frank confession that the Positive school still essentially consisted of myself alone. Since that time the position of Positivism has radically changed. Throughout Western Europe men's thoughts and feelings are more and more occupied with it, in spite of the formidable obstacles to its popular dissemination interposed by our unworthy press. Writers who, having no thoughts of their own, could only become useful by facilitating communication between philosophers and the mass of the people, do all they can to intercept such communications, and thus prolong the anarchical preponderance maintained by talkers over thinkers. But these attempts, whether instinctive or deliberate, to ignore Positivism, were brought completely to an end six years ago by the adhesion of an eminent writer (M. Littré), whose nobility [1] of character is even more fully recognised than his great intellectual powers.[2] He has now become

[1] Written in 1851. [Tr.]

[2] A very competent judge of moral excellence, the illustrious Carrel, whose premature loss is being more and more felt, told me that what he specially admired

my principal colleague; and his life is devoted as entirely as my own to the advancement of Positivism both as a philosophical and political system; he as well as myself regarding it as the sole means of terminating modern anarchy. His close connection with me prevents me from enlarging further on the value of his approbation; I mention it, however, as the essential means through which I have at last obtained justice after persevering through twenty-four years of isolation; the end of this period thus coinciding with the time of my moral revival.

Though this was my principal support, I can never forget the sympathy previously received from the best English thinkers; three of whom generously rendered that memorable assistance which deferred for a year the material pressure caused by the confiscation of my Polytechnic post. But though the new philosophy is more widely known and better appreciated in England than anywhere else, English positivists are as yet very rare; their adhesion stopping short at the intellectual stage, and not embracing the moral and social consequences of the doctrine.

Far otherwise is it with the modest and honourable nation which, since the Middle Ages, has always held the van amongst the populations of Germany. The positivist nucleus which arose five years ago in Holland never separated the social aspect of Positivism from the intellectual. It has always felt that the principal purpose of Positivism was to supply the basis of a universal synthesis as the sole method by which the Western Revolution could be brought to an organic conclusion. Unfortunately, this body has lost one of its best members, one distinguished for moral as for intellectual worth, taken from us at the age of Vauvenargues and of Bichat.

But important as these adhesions are, Positivism will not as yet meet with general acceptance in the north of Europe. Its principal support will come from those nations which escaped

in Littré, whom at that time I did not know, was the beauty of his moral nature. Intimate personal contact has since then enabled me fully to endorse this judgment on the strongest public and private grounds.

the Protestant movement, and are therefore the more anxious for true reorganisation. As yet the religion of Humanity is but little known in Italy or in Spain; but a few instances have already shown the welcome which will be given to the doctrine of women and of proletaries, in the countries where the true character of these two principal constituents of social union is most clearly seen.

The whole subject of Positivist propagand has increased beyond expectation in importance and magnitude since the movement of 1848. The delusions of constitutionalism being finally set aside, the impossibility of terminating the revolution otherwise than by an effective alliance of Order with Progress is brought into full prominence. Such a programme brings with it a special appeal to the one doctrine capable of forming fixed general convictions. The feebleness of former schools of opinions becomes thus more plainly discernible; and indeed the more distinctive features of each of them are already lost. The retrograde school, wishing to perpetuate its transitory function of maintaining material order amidst spiritual anarchy, is now effecting its own degradation by official acceptance of the doctrine of popular sovereignty. Similarly, the negative metaphysical school, desirous of heading the progressive movement at a time when Progress consists almost entirely in construction, is casting the programme of the eighteenth century aside, and attempting to reorganise society on the theological principle, while protesting against the institutions without which theology has no coherence.

A situation which thus discredits and disintegrates all other schools, exhibiting them as at once subversive and retrograde, cannot fail to increase the energy and influence of the one school which offers systematic guarantees for Order as well as for Progress. At the time when the French Republic was finally proclaimed, I founded, under the name of 'Positivist Society,' a fraternal association of thinkers and workers, whose quiet weekly meetings have never been interrupted. This association, formed with the avowed aim of giving organic

direction to the last phase of the Revolution, has taken as its starting-point my General View of Positivism, published in July 1848. This work, based upon my course of lectures of 1847, forms a systematic prelude to this treatise.

In addition to this general outline, I put forth in the same important year three smaller publications, with the view of organising in certain directions both the spiritual and the temporal transition towards the final state. In these were indicated successively, the new form of government adapted to the crisis, the school calculated to form true philosophers by the remodelling of medical studies, and the historical calendar commemorating the great names in Western history. Having thus regulated the present, prepared the future, and glorified the past, we now possess the outlines of a policy of transition, such as could never have been developed under the fictions of monarchy. This was the one remaining condition that Positivism had required for organising a Western party capable of setting aside all the existing parties, whilst rallying the various classes connected with them in the name of Order and of Progress. I am therefore glad to have forestalled the conclusions of this treatise by the recommendation of this series of transitional measures in the Positivist Society. When I come to speak of them in their proper place in the fourth volume, their acceptance as part of the Positive system will be facilitated by the favour shown to these partial statements, the mutual connection of which is as yet hardly understood. The pressure which led me to these anticipations has so far justified them that under their influence new positivist centres have arisen at Madrid, Aberdeen, Genoa, and Brussels.

In the following year the new spiritual power took up a still more important position, a result of the unconscious influence on the French Government of the same general situation which is now leading up from every quarter towards Positivism. Under the previous Government my exposition of the new philosophy had been limited to the indirect and inadequate channel, however useful provisionally, of introductory remarks

prefacing the course of gratuitous lectures on Astronomy that I have been delivering for seventeen years. But since 1849 I have been able to expound Positivism in its entirety in a public room allotted to me in the Palais-Cardinal, under the title of a Series of Philosophic Lectures on the General History of Humanity. I am indebted for this new advance mainly to the noble support of M. Vieillard, who has followed for twenty-five years, with true civic zeal, the continuous growth of a philosophy which he has regarded from its first appearance as the sole means of surmounting the anarchy of our times.[1] Workmen are still too much taken up with utopian schemes to avail themselves sufficiently of this opportunity of placing themselves at the historical point of view; for want of which their socialism must remain not only inadequate but dangerous, because insufficiently imbued with the sense of continuity. A satisfactory audience, however, of both sexes, sustained by the importance and urgency of the subject, followed with close attention this long series of lectures, each lasting four or five hours, embracing every subject discussed in the present work. The encouragement thus given induced me in 1849 to dwell specially upon the Religion of Humanity, of which my General View, published in the previous year, had laid down the foundations; and to develop some of its essential features I put forward the scheme of private worship, based upon my conception of guardian angels, which had originated in my own daily acts of devotion; and I established in a definite shape the connection between private and public worship, consisting of the series of the nine social sacraments.

That these two institutions were not premature was seen by their practical adoption in several instances during the following year. All emancipated minds will soon feel the need of reverting to the culture of the heart, when purified by Positivism from the self-absorbing chimeras which interfered with it in

[1] I am bound here to express our gratitude for the zeal and firmness of M. Bineau, who, as Minister of Public Works, gave the requisite authority for my course, allotting to it a room in a building under the jurisdiction of his department.

the noblest catholic types. The direct and normal development of subjective life was necessarily reserved for Positivism, where it already appears as an habitual source of moral and intellectual growth, and even of physical amelioration, guarantee as it is of cerebral health, in which the whole vital harmony is so deeply involved. By this series of institutions Proved Religion shows itself capable of superseding Revealed Religion at all points; depriving the latter of its claims to moral no less than to political superiority. Besides the daily religious practices adopted by several positivists in private, I solemnly conferred in 1850, as Priest of Humanity, the three chief social sacraments, those connected with birth, marriage, and death. This last, performed in the case of the illustrious Blainville, is the only one on which I have published remarks of importance, which will be found reprinted at the end of this volume.[1] Thus the new Religion is already practised, though its principles have never been explained otherwise than orally, pending their complete exposition in the fourth volume of this treatise. To complete this view of its progress I should speak of the successful attempt of a young Positivist of intellectual promise equal to his moral excellence. M. Longchampt has composed for all the days of the Positivist week, as conceived by M. Leblais, a series of beautiful prayers well calculated to direct the worship of the family, as the connecting link between private and public worship.

Thus the fourth year of the Republic finds the Positivist party sufficiently provided with the elements of the institutions necessary for its great and arduous task, the guidance of the spontaneous tendencies of the West towards final regeneration, so as to avoid henceforward all interruptions, whether reactionary or subversive. The two great forces which alone can give effect to such a plan are already approaching us, though our points of contact are as yet insufficient. Among workmen, though the routine of revolutionary traditions still ranges most of them under incapable leaders, a few noble types have identified themselves with the party of construction. The author of the first

[1] See Appendix to this volume.

publication of our Positivist Society, in June 1848, was a cabinet-maker, M. Magnin, whom I confidently point out to workmen as exhibiting, whether in sympathies, intellectual vigour, or strength of character, the best type of a true statesman. The conviction is growing that the practical purpose of the Revolution is the satisfactory incorporation of the people in Modern Society, carrying out to its consequences the programme bequeathed to us by the Middle Ages. But the empirical and subversive methods in which this great question is being handled will soon show that its real solution belongs to Positivism, where it is seen to depend on a systematic reorganisation of opinions and habits of life. And here we pass at once to the changes in the position of women which will ultimately form the principal feature of Positivism as a social system. Workmen cannot know sufficiently what ought to be their highest source of pleasure, domestic life, until women are able to devote themselves to their proper functions, and can be spared all outside work. The immense improvements in the position of women which Positivism brings with it, the high value set upon their sex as the most complete representative of Humanity, are already arousing unmistakable sympathy. A month after the publication of my General View of Positivism, an English lady, whose domestic virtues are as well known in London as her literary talents, gave her full adhesion to my theory of Woman. 'I have not had the time yet,' she wrote to me, 'to read your book as I intend to read it, but I have been delighted by certain pages on my own sex. On this subject you stand alone. Other writers either give woman an inferior position, subservient to the material wants of men, or urge her to work unsuited to her nature and her instincts; you are alone in reconciling her moral and intellectual dignity as a companion, with the fact of physical and moral dependence. And then you understand the marriage tie, which means submission and ascendancy, purity and tenderness.'

Reviewing these results as a whole, it is pleasant to contrast them with the narrow scale of my first expectations. When

the first volume of my Philosophy was published twenty years ago, I told my friends that I should be satisfied if one day I had in France or elsewhere fifty adherents. At that time I had not one. Subsequently, and during the greater part of this time of isolation, my constancy was fortified by the warm support of Charles Bonnin, a noble revolutionary type, a worthy friend of the great Carnot; old enough to be my father, he felt pride during his old age in becoming my first disciple, placing too low a value on his own writings. Carnot himself, a few months before he died in exile, had transmitted to me most touching and deeply valued proofs of his approval of my discovery, then quite recent, of sociological laws. Thus the purest representative of the negative revolution bequeaths with genuine civic feeling to the founder of the Positive revolution the continuation of the immense work of regeneration begun by the wise instincts of the great Convention. It is for true republicans now to judge whether my career as a whole justifies the hopes which the virtuous instinct of that great citizen led him to build on an obscure pamphlet.

The moral coherence of the positivist party was soon subjected to crucial trial in consequence of the ignoble persecution which in 1848 had succeeded in cutting off all my material resources. Of the two kinds of sympathy which I invoked, those on which I most counted have made no response to the appeal made to them in my General View. My illustrious colleague, M. Littré, with the aid of other adherents, has instituted an annual subscription with the avowed object of compensating my spoliation without subjecting me to subordinate employment interfering with my essential work. But not one of my many pupils and associates of the Polytechnic School, though all were specially informed of the nature of the attack made upon me, has taken any part in this attempt at reparation. It is supported only by true positivists, whose poverty and small number account for its present inadequacy. While adding an additional feature to a picture of selfishness only too characteristic of our time, this test is at the same time a satisfactory

proof of the genuineness of new moral convictions, thus already modifying the ordinary practice. I felt bound to express due gratitude for the safeguard thus honourably secured to me, which, though it still remains insufficient, gives me full confidence that I shall be able to devote my energies, during the few years of life that remain, to uninterrupted work in the service of Humanity.[1]

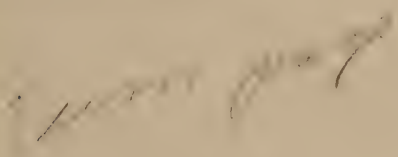
As illustrating the growing strength of true positivist conviction, I may point to a further contrast connected with the special difficulties experienced for more than a year in the publication of this volume. Having finished it on February 24, 1850, I resolved, contrary to my first resolution, to publish it separately. I had recently formed the resolution, on Positivist principles, of abandoning all profits connected with the sale of my books, and with the view of facilitating arrangements, I made this decision generally known. But this resolve, which I consider indispensable for the maintenance of the moral standard of the new Western priesthood, failed to induce any publisher to undertake the printing of these four volumes. I then determined to sell the volumes separately, without, of course, interfering with the continuity of the treatise; but even this concession would not have sufficed, had not a young positivist (M. Longchampt) come forward and offered the publisher his personal guarantee for the expense of printing. The smallness of his means increases the value of this generous conduct, which, however, I hope may not involve him in loss. I am here reminded of the spontaneous generosity which in 1848 enabled me to publish the General View as a first instalment to this Treatise. Both cases being praiseworthy, I need not allude further to a contrast between rich and poor which here too presents itself.

[1] The preface to the sixth volume of my Positive Philosophy will naturally lead my readers to expect further details of the persecution spoken of then as imminent. I promised in 1848 to speak of it in the last volume of the present treatise. A formal reconciliation with my principal opponent will however debar me from dwelling at any length on this painful story. I must restrict public reprobation to the vile traitor who in 1848 abused his official position to procure the failure of compensation which had been universally expected; satisfying thus his inveterate envy while promoting the interests of his worthy nephew.

Such procedure exhibits the Positivist party as already possessed on a modest scale of sufficient resources for its moral, intellectual, and even material requirements. During the whole of my career, I have never received any real support, however small, from anyone indifferent to my opinions. This unparalleled fact seems to me characteristic of the more perfect coherence of Positivism as compared with any previous synthesis. With more pliancy it might have attracted support from various quarters by its inherent aptitude of combining opposite points of view without inconsistency. But such temporary success would have seriously impaired the full effect of its ultimate influence, from which nothing can escape, because the interdependence of the whole is so complete. The religion which invites our race to supply its own providence ought itself to rise without alien protection.

AUGUSTE COMTE.
10 Rue Monsieur le Prince.

Paris, 23 Aristotle 63:
Thursday, March 20, 1851.



DEDICATION.

TO THE SACRED MEMORY

OF MY ETERNAL FRIEND

MADAME CLOTILDE DE VAUX,

WHO DIED IN MY PRESENCE THE 5TH OF APRIL, 1846, AT THE BEGINNING OF HER THIRTY-SECOND YEAR.

O nostra vita, ch' è si bella in vista,
Com perde agevolmente in un mattino
Quel che 'n molti anni a gran pena s'acquista! [1]

GRATITUDE. REGRET. RESIGNATION.

Paris, Sunday, October 4, 1846.

NOBLE, TENDER-HEARTED VICTIM,

The untainted purity of our love leaves me free now to offer this funeral homage, without any concealment of the solemn union in which our last weeks were spent together. Our sad lot has at least allowed us to feel that loyal examination of our conduct would increase the claim of either to the cordial respect of all honourable minds. When Humanity shall institute that rigorous enquiry into my private life for the guarantees of morality that should always be demanded from true philosophers, our correspondence would suffice, if needed, to prove the unbroken sacredness of a bond not common in its nature, and honourable to both our hearts alike. And I find an adequate recompense for this blameless conduct in being able now to utter my deepest

[1] Petrarch.

feelings with that complete frankness by which the expression of my thoughts on every subject has been ever guided.

With beautiful modesty, yielding at last to my affectionate entreaty, you had accepted the dedication of my second philosophical work, begun last year under the growing influence of the ennobling affection, which in spite of death will shed its glow over the rest of my sad life. Be it then to your sacred memory that this solemn testimony of gratitude is given, now that no tender scruples any longer restrain its utterance!

I. Unwonted circumstances, not of my choosing, and but too easily explained, had checked the free flow of a deeply affectionate nature implanted in me by a most loving mother, so fit, alas, to have become your own. Fatally hampered thus, my heart seemed condemned for ever to privation of all fit sustenance except in the insufficient though cherished exercise of universal love called out by my philosophic career. But for my contact, late in life, with you, I should never have known the full strength and clearness given to our highest affections by concentration on a worthy object.

This close intercourse of two hearts, both ripe for the purest harmony, had been preceded in either case by the spontaneous accomplishment of the conditions necessary to its full efficiency. Some years before our first interview, I had regained, morally, entire freedom of action, in a crisis the more decisive that it had not been sought by me; and I had already begun to feel the deep inadequacy of the isolation which at first had seemed so precious. The awakening of esthetic sensibilities, especially for the most sympathetic of the arts, could only indicate, it could not satisfy the strong cravings of my heart. Yet all this in me would not have been enough had I not found in you the same freedom and the same tendencies. Long before our intercourse, the incomplete protection of the law had itself freed you from the unworthy bond to which you had yielded dutiful submission. Your position had again become one of painful dependence, unalleviated by fitting recognition of your noble nature, or even by the respect due to exceptional calamity.

Urged thus, and authorised, both of us, to seek at last for completeness of affection, our natural sympathies were strengthened beforehand by the sad resemblance of our personal history, though my calamity indeed was far the less. Friendship thus prepared, though recent, soon grew to the strength of an old and familiar tie, from the

time when you knew me well enough to write the words, *I trust you with the rest of my life.* Little did we then foresee how soon this precious mission would be ended!

To you alone, Clotilda, I owe it that for one incomparable year I shared, though late yet fully, the sweetest human feelings. The sacred intimacy at once of a father and a brother, such as our position made possible, revealed to me in you, amidst all other personal graces, that marvellous combination of lofty and of tender aspirations that perhaps was never before so perfectly realised. And this moral excellence, set off by the finest attributes of a woman's mind, was so happily combined with simplicity and strength of character! Familiar contemplation of so perfect a type could not but increase, even when I knew it not, my systematic ardour for the universal progress towards perfection, to both of us the one great aim of public or of private life.

Those who know that in the constant exercise of generous instincts lies the principal source of true happiness, personal or social, will appreciate this solemn thanksgiving for the unutterable bliss thus revealed to me, and destined to effect such permanent results upon my moral growth. As will ever be the case where affection has been well bestowed, your strengthening influence has spontaneously made me more affectionate to my friends, more indulgent to my enemies, more gentle to my inferiors, more submissive to those above me. Far from paralysing my former energy, it has greatly added to its efficiency; the strenuous perseverance that I had shown previously is now combined with patient moderation, to which till then I had been little inclined. To you, in great measure, I owe it that I endured without useless murmuring a shameful persecution, which at other times would have goaded me to ardent expressions of feeling, unseasonable however justified.

Fears were felt, founded on imperfect knowledge, that the unexpected revival of my inner life might be injurious to my public work. You especially, in your extreme delicacy, were harassed by constant thought of this antagonism, which, despite all my protests, shows itself so touchingly in the very last of your priceless letters. Yet it is here in reality that my debt to you is greatest; for it is you who have enabled me in a time of moral anarchy to realise that perfect harmony between private and public life, so essential both to the happiness and the nobleness of higher minds. Until then, indeed, nothing but my social mission had enabled me to bear the bitterness of my private life.

But under the impulse which you unconsciously gave, I felt and enjoyed the long-delayed recoil of energy by which private life enlarges the scope and vigour of public action.

Towards this result my philosophic reflections had already inclined me. I recognised fully the preponderating importance of home affections in the moral development of man. No one had a keener sense of the dangerous fallacy of modern utopias in this respect. Reverting to antiquity in their blind fanaticism for progress, they one and all insist that the moral nature shall rise without any intermediate step from primitive self-love to universal benevolence; degenerating speedily into vague and barren philanthropy, too frequently subversive. From these metaphysical errors the new philosophy is free. It holds the principal excellence of modern morality to be the value set upon private life as the essential means for training the sympathies. Had this aspect of Positivism been more familiar to you, it would have dissipated your tender and conscientious fears that my personal affections might interrupt my social work.

The spontaneous convergence of personal with social ardour had peculiar fitness in the second period of my philosophic career, where from the very nature of the final effort towards which my whole mission had been directed, it was the heart rather than the intellect that must be addressed. Therefore I state confidently that, apart from all personal feeling, no dedication was ever more deserved than this, because it records a real fellowship in work between us, indirect and involuntary, but none the less effective.

In a time when the pride of understanding is in reality the principal obstacle to true regeneration, both of us were thus so fortunately organised as to place intellect in its proper place; adjusting it in that wise subordination to the heart which forms the necessary condition of all harmonious growth, whether individual or collective. Personal unity implies the supremacy of that class of inclinations round which alone all the others can be rallied; and social union demands the systematic precedence of the sole impulse through which individualities can become convergent. Nor has the supremacy of the heart any inherent tendency to hamper intellect; it simply gives direction to its action. On the other hand the exceptional authority of intellect since the close of the Middle Ages has been too frequently injurious to moral progress, stimulating anti-social vanity in the gratification of barren curiosity. Therefore it is that the first of these two

supremacies is the only one which is normal, whether for individuals or for societies; the other is required only in revolutionary crises, of which it forms the characteristic feature. Such is the conclusion of sound philosophy when raised in its natural course to the true social point of view, which for all my predecessors had been unattainable.

The establishment of this great principle was the main purpose of my primary work; and thus the way was prepared for keeping it constantly applied by maintaining the invariable preponderance, logical and scientific, of social conceptions over all other branches of positive speculation. On this basis the present work stands; its object being, in accordance with the essential purpose of true philosophy, to systematise human life as a whole on the principle of the subordination of the intellect to the heart. The chief difficulty of my task is doubtless to induce the intellect to accept this position voluntarily, since no permanent result can be attained otherwise. But could I hope to effect this profound renovation in others, had it not become thoroughly familiar to myself? Here, dearest one, it was that the reaction of pure personal love upon philosophic thought was so specially valuable to me.

By a happy coincidence these strong emotions arose at the very moment when my new work urgently demanded personal experience of tender feelings. In their first utterance, I told you openly of the harmony which I already felt growing between my highest thoughts and my dearest affections. After frankly devoting the first half of my life to the development of the heart by the intellect, I saw its second half consecrated to the illumination of the intellect by the heart, so necessary to give the true character to great social truths. But how could I hope for these new inspirations unless I had myself experienced the full strength of that feeling which is most powerful to raise man from his primal self-absorption, by deriving his highest happiness from another? How thankfully I accepted then the unwonted and involuntary lot which had delayed my solitary experience of this highest feeling till riper age; for the moral power of it is increased by the delay, when disciplined reason has given systematic sanction to the choice. If at first I lamented the inequality of our ages, your high qualities soon reconciled me to a fact which rendered our affection still more fitted for its lofty purpose.

Through you alone it is that I have been able to stir that reaction

of the heart upon the intellect, without which my mission would have failed. But for your gentle influence, my long philosophic training, even though seconded by esthetic pursuits, could not have enabled me to realise the true systematic preponderance of universal love, the principal and final characteristic of Positivism, and which more than any other will ensure its general acceptance. At each stage of my new work, till interrupted by the fatal illness, I delighted to testify my gratitude for the involuntary aid which kindled my highest inspirations. Never had I felt so clearly the intense reality of the fundamental truth proclaimed by the noble Vauvenargues,[1] the one thinker of the eighteenth century who spoke worthily of the heart; and whose intellectual and moral value offered so striking a parallel to yours: a parallel completed, alas, by the same untimeliness of death!

II. Our pure friendship then was, in every sense, as precious to my public as to my private life. Yet deep and just though my gratitude for our short past may be, it must ever fail to equal the eternal regret for the incomparable future that was opening before us at the time of our separation. The personal independence that you were on the point of reaching, and the perfect mutual confidence resulting from our recent experience, had opened a free course thenceforth for our rare occasions of union. Besides that we were happily united in opinion and even in tastes, what specially drew us together was, what is less common now, the tendency in both to make the heart supreme in human life. We had so often said to one another, *We weary of thought, and even of action: we never weary of love!* And each of us saw that the perfection of friendship implies difference of sex, saving it from the possibility of disturbance by rivalry.

Although this perfect harmony was taken from me so soon, it is enough that I have felt it once, never to be satisfied again with feebler sympathy. Thus I shall go down to the grave without having known, except for one short moment, that full identification for which my heart longed! Not for me those chaste caresses, those loving looks, which dissipate in an instant the weariness of prolonged meditation, and only leave the charm of the elevation and the wide scope which it has brought! At the beginning of the slow and painful struggle, which never clouded the reason, though in an illness almost always accompanied by violent delirium, you pictured my inner life in touching

[1] Les grandes pensées viennent du cœur.—Tr.

words, coming from a heart always absorbed in unselfish feeling; *You will not have had your companion long!*

But the hope of gaining some public sympathy with my personal sorrow must be vain until I show the inestimable loss that Humanity has sustained. Alas! it is but a year ago, when I was asking you to promise that my own heart one day should be justly judged. The stern philosopher, thought to be accessible only to intellectual interests, had been at once recognised by you as the most loving of all men that you had known. Your uncontested decision, on a point essentially reserved for women, would perhaps have protected my memory against the angry sophisms and shallow prejudices by which intellectual reformers are usually harassed. Why, in defiance of the natural order of age, should it be to me that it falls now to reveal to the world its ignorance of you?

My warrant for claiming public sympathy in the performance of this sacred duty, is that I saw in you not merely a noble friend and precious counsellor, but also a powerful fellow-worker in the immense work of regeneration called for in our time. The new philosophy, as this second treatise will show, has now reached the point where it calls upon your sex, not merely for earnest sympathy, but for active and potent aid; and of this your heart and your mind were equally conscious. No intellectual reform can truly regenerate society until the transformation of ideas has been followed by that of feelings: this last alone is decisive of its social power, and without it Philosophy could never be a substitute for Religion. The first part of the work, in which intellectual questions predominate, might naturally be reserved to my own sex: but the second, where the heart predominates, should be the domain of yours. You alone, amidst the gifted women of our time, had clearly understood this succession and this union of efforts; your conception of them, in your own way, being hardly less profound than my own.

The common prejudices as to the so-called hardness of Positivism ceased to have weight with you, when you saw the distinction between Positive Philosophy and the various special researches which prepared the way for it. All the conceptions that I had ever formed, or was yet to form, with the view of enlarging the scope of human power in every direction, I felt sure of being able to submit with profit to your friendly judgment: you alone I knew would never suspect me of affected feeling, so foreign to my whole intellectual and moral temper. The deep

impression that Catholicism could not fail to make on such a nature had happily preserved your progress to intellectual freedom from being seriously hampered by the shallow deism of the last century: besides, your mind, with all its gentle gaiety, could never be satisfied with the attitude of mere criticism, fit only for writers of the second rank. All that was noble or tender in the admirable system of medieval life, can and should, you saw, be appropriated by the modern time: with the superiority inherent in a system of which every principle can bear discussion, and in which the noblest aspirations are no longer tainted by inordinate self-love.

You saw already the noble career opened for women by participation in this mighty work; the natural earnest of the wider field of legitimate influence reserved for them in the future. Your mind, familiar as it was with the principal productions of your sex, would soon have completed the necessary training. I had succeeded at last, notwithstanding your singular modesty, in showing you that exceptional purity made in your case the natural reaction of feeling upon thought one of peculiar power. You had already marked out for yourself as a contribution in aid of the regenerating movement a literary work, which at the same time was to forward your most legitimate desire for personal independence. I deeply regret not to be able to supply any fragment of your unfinished *Willelmine*, to which I had contributed friendly counsel, and even indirect participation, by the letter which at your request I wrote you, last January, on the true theory of marriage. But the secret oppression which weighed down your whole life was not arrested by your tomb: the precious manuscript which you openly bequeathed me, was finally refused, in defiance of the most formal promises, and notwithstanding the explicit order of the head of your family, whose soldierly sense of honour was shocked at a violation of faith due perhaps to the painful motive of literary rivalry.

Yet the general purpose of this sketch should be indicated here, not so much in justice to you, as because it is so striking an example of a wise practical use of feminine talent. In a time when so many minds of vigour and experience are occupied with revolutionary dreams affecting the elementary constitution of the family, it is well to note the instance of a young and gifted woman, ripened by sorrow, devoting a career of rich literary promise to the earnest defence of the inviolable laws that lie at the root of social union. If your sad history ever

becomes known, it will be acknowledged that no one had greater cause for regarding the institution of marriage with unrelenting bitterness. But as you said so well in your touching story of Lucie; *It is unworthy of a noble nature to diffuse its pain.* This beautiful saying was unconsciously the motto for your life.

Guiltless victim of a strange fatality, you fully acknowledged that the generality indispensable to social rules must not be judged by the light of painful anomalies. Through all the injustice of your suffering, your calm reason saw clearly through the frivolous or sophistic declamation that concentrates itself on evils undoubtedly real, yet minor or accidental, and hurries forward to radical changes which would undermine the purity and permanence of the highest human feelings. Inspired by your own beautiful nature, your *Willelmine* was intended to refute, indirectly but decisively, the dangerous paradoxes of an eloquent contemporary authoress, with whom if fairly judged you had no reason to fear comparison.

Your singular heroine would have past through the principal aberrations of the present time; but, preserved by innate purity and elevation of character, was at last to reach true domestic happiness without having ever succumbed throughout her various trials. The series of pictures of a woman's heart under varying influences, skilfully analysed by a mind of spotless purity, would have been keenly interesting and in the highest sense useful. To the honour of your sex I have observed that these sophistic attacks upon the family, though nominally intended for their profit, have found little acceptance among good women. Women, judging mainly from the heart, are soon revolted by the moral anarchy involved in them; while the more ambitious reason of men, plunging into these difficult speculations unguided by principle, fastens often upon pernicious extravagances, all the more dangerous and permanent because less checked by delicacy of feeling. Bearing out this contrast, the tendency of your own noble attempt was to close this mischievous controversy by the supreme intervention of true feeling, the natural field for womanly talent.

Although death stopped this sacred work, perseveringly pursued through much physical suffering, I hope this imperfect and inadequate account may be sufficient to inspire sincere regret, perhaps to stimulate similar effort. The oppressive sorrow of your life should at least predispose others to venerate principles capable of producing such convictions in those who were the heaviest sufferers from their rigorous

application. Were it right to compare my case with yours, though your sorrows were so far the greater, I might remark that we alone in the party of progress have stood out in energetic defence of marriage, in spite of unmerited personal suffering. Besides the new argument thus furnished in behalf of this basis of social union, we have here a refutation of the common-place prejudices against the moral side of the only philosophy now capable of systematically defending the principles of order, which are becoming more and more compromised by theological paralysis and metaphysical anarchy.

Our spontaneous convergence on these subjects is enough to convince competent judges of the philosophical value attaching to our union, quite independently of any mere dogmatic assent. Therefore all who seriously interest themselves in the new philosophy cannot but mourn the loss of precious aid from one who while never failing in the finest delicacy of her sex, had thus in her own way made the highest conceptions of social truth so entirely her own. The positivist principle of the fundamental harmony between the two sexes had been eagerly accepted by a nature so capable of applying it wisely. The dominant qualities of either sex being usually too feeble in the other, it is in other than merely material aspects that their union is indispensable to form the true elemental unit of human society.

If nothing great can come from individuals without perfect harmony between the mind and heart, so, too, all social renovation needs active co-operation of the two sexes. So long as women silently regret the extinction of Catholic Feudalism, dwelling, as they well may, on the beautiful and undying memories of chivalry, the modern revolution will have failed yet to assume its permanent character, and political reaction will continue to seem possible. The only way to make them cordial fellow-workers in the movement is to offer them a philosophy as satisfying to the needs of the heart as to those of the mind. This condition Positivism undoubtedly fulfils: but women can only be convinced of it by a woman.

With myself too, doubtless, the heart must be the final aim; but I have to reach it indirectly, through the mind; by securing the triumph of ideas corresponding to the highest sympathies. For you I had reserved the converse task, easier and equally effectual, of appealing directly to generous emotions, and of leading thought thus to almost resistless acceptance of the widest truths. Each of these two great tasks is socially inadequate without the other: the first alone, leaving

the feelings passive, is incompatible with practical application of the principles, even in isolated cases; and the second, without the first, giving no coherent basis for the feelings, would stir up mystic agitations, in which man and humanity would oscillate and wander endlessly without issue.

Both of us clearly understood this beautiful adjustment of functions, so correlated, yet so independent; as distinct in procedure as in principle and in purpose; the one striving to establish by scientific research solid masculine conviction; the other by the agencies of art stirring the deepest feminine feeling. Between two services equally indispensable there could be no question of preference; nor could their order of succession be a matter for debate, since each can and must strengthen the other. Our pure friendship could only have adorned and hastened on this unexampled union of efforts, giving thus a spontaneous example of the way in which true philosophy reconciles the hitherto opposed claims of the intellect and the heart.

III. Such was the sacred union which entitles me now to call on higher natures for sympathy with my own private and unending sorrow: for death alone destroyed this noble plan, the principal conditions of which had been already fulfilled, and which the life before us seemed sufficient to realise. Ah! could my reason ever sink back to theologic creeds adapted only to the childhood of our race, this calamity would suffice for indignant rejection of the providential optimism which claims to console our sorrow by inculcating blind admiration of the most appalling disorder. Ever spotless victim, thou who knewest of life little but its deepest sorrows, thou wast stricken at the moment when thy just meed of personal happiness began, bound up with the loftiest of social missions! And I too, though less pure, did I deserve, after such unjust suffering, to be thus cut off from bliss that came so late to a lonely life, consecrated from earliest years to the highest service of humanity? And is not this twofold private sorrow a public loss, for which it is impossible to imagine compensation?

But sound philosophy, while setting aside for ever chimerical and idle beliefs, henceforth as noxious as formerly they were useful, rejects also the complaints that follow them. It does not require us to accept the dangerous sophisms which would veil the exceeding imperfection of the universal order. Yet it is the only source of that true Resignation which submits courageously to evils which human intervention cannot reach, while striving to react on outward fatalities by strengthening the

inner life. My sorrow admits neither consolation or distraction; and I seek none. As Vauvenargues said when he too was lamenting an untimely loss; *To be consoled is to love no longer; and that is shallow-hearted and ungrateful.* Far from forgetting you, I should strive to suppose you living, that our union may become ever more complete. Our one incomparable year of mutual and virtuous love has left me many pure and noble memories, strengthened by characteristic correspondence. These I shall call to life, as I have done for six months, by daily, weekly, and ultimately by annual acts of devotion. This treasure of affections is the chief sustenance of my inner life.

And if, despite all efforts, the sad closing picture will still force its way before the rest, yet with it comes back the latest testimony of your sacred love. To me alone were those last words spoken: none else was present except Sophie, the noble-hearted servant whom your generous spirit loved to look on as a sister, and whose unflagging devotion to your long sufferings will ever claim our deepest gratitude. Can I ever forget the last command, solemnly repeated five times, when you could see and hear no longer, but could still think and love, a few minutes before the final breath: *Comte, remember that I have done nothing to deserve my suffering!*

These venerated words, too faithful portraiture of your whole life, will command my inmost soul's obedience. They are the irrevocable seal of a union which for both alike was almost equally exclusive; for in the sphere of personal feeling each was all to the other. Death cannot bring back my former isolation, for nothing now can shatter or unloose the only tie which binds me. The culture of all memories, personal or public, is upheld by Positivism more systematically and with greater effect than by any other system; and by this precious attribute of the new Philosophy we are the first to profit. How many loving hearts have fed through long years upon this sad sustenance, without the same resources for procuring it!

The highest purpose of our union was to make our hearts more perfect; and that purpose can still be pursued with delight, even though the intercourse of feeling is active on one side only. True insight into human nature, individual or collective, prescribes the general rule of indissolubility for all close ties. A finer extension of the same principle leads on similar grounds to the universal rule of widowhood. This moral duty, honoured and approved by all, becomes for either sex a fruitful

source of moral progress and of noble joy. If a whole life hardly suffices for two beings to know and love each other perfectly, if therefore through perfect constancy alone can the deepest human feelings ripen, why should Death break off the continuity of sympathy? When the fatal separation comes, is not the obligation equally undoubted, whether the union has been of months or of years? Or rather, should not that be more strenuously prolonged of which the duration has been briefest? Forgetfulness can only come from shallowness of heart, which for want of persevering tenderness loses at once the best fruit sown in past years. Still more certain is the degradation of inconstancy in him who, deprived of the higher love, is satisfied with some coarser affection, as in the case so energetically stigmatised by Calderon.[1]

Six months of deep meditation on this bitter crisis of my life have thus added strength to the solemn promises which comforted your last hours. And anxiety for my own highest welfare will keep the sense of this duty ever present with me. Therefore it is that every day before the shrine consecrated to you I repeat with growing assurance, that Death for ever seals the bond of affection, esteem, and reverence.

Here then, for me, in this irrevocable communion of our lives, the age of personal passion finds its fitting close. Henceforth I give myself exclusively to the noble civic passion which from earliest youth devoted every energy of my being to the great work of regeneration. Thus it is that the seeds sown by your influence shall, in spite of Death, grow to full maturity. Though an active fellow-worker no longer, yet your silent aid cannot be taken from me. During our sacred year of happiness, your sweet impulses mingled far more than you could ever believe with my highest philosophic inspirations. The same blest influence has been with me during the last six months, aiding my thoughts as they moved onwards in the midst of tears. Wisely cherished, it will continue, I feel, to purify and kindle my highest thoughts. It strengthens and ennobles too all that sense of beauty which we shared in common, and which besides its intrinsic worth is now the sole antidote for the oppressive barrenness of scientific study.

[1] Es hombre vil, es infame,
El que, solamente atento
A lo bruto del deseo,
Viendo perdido lo mas,
Se contenta con lo ménos.

Consecrated henceforth to the work of social reconstruction built up on the basis of philosophic reform, I shall feel the full and immediate value of that long-delayed completion of my moral training which I owe to you. In all that relates to the true position of women, and to their increasing share in the general movement of mankind, it will be my delight to strengthen and develop my philosophic conclusions by the vivid remembrance of our complete agreement on a subject in which it is peculiarly important for the thoughts of one to receive full sanction from the other. With singular clearness you had seen the natural tendency of Positivism to bring forward into systematic prominence, both in private and in public life, the worship of woman, which in the Middle Ages had been faintly foreshadowed. In the varied developments of this fertile range of thoughts and feelings, I shall henceforth feel the inspiring charm of personal experience, the sincerity and fulness of which can be contested by none.

In bringing these words of well-merited Dedication to a close, I feel already the large results flowing from our eternal union. By the fulfilment of a loving duty I am brought back to the great work which had been suspended by our calamity. Meanwhile the moral reaction thus obtained will restore, I trust, all my former powers. By distinct and regular utterance, feelings no less than thoughts gain increased precision and coherence. This perhaps, with competent judges, may be an excuse for the unusual character and length of this testimony of respect. Those thinkers who know the influence of generous sympathies upon the mind will not think that time spent in retracing and rekindling pure emotions has been spent in vain. But I appeal more especially to those in whom the impulses of the heart are paramount; whether amongst women, amongst the people, or amongst the young.

Farewell, changeless friend! farewell, my Saint Clotilda, thou who wert to me in the stead of wife, of sister, and of child! farewell, loved pupil, true fellow-worker! Thy angel influence will govern what remains to me of life, whether public or private, ever urging me onwards toward perfection; purifying feeling, enlarging thought, ennobling conduct. May this solemn incorporation into my whole life reveal at last to the world thy hidden worth! Thus only can thy benefits now be recognised, by rendering my own performance of the mighty task before me more complete. As the highest personal reward for the noble work that yet remains to be done under thy lofty inspiration,

it will be granted perhaps that thy name shall remain ever joined with mine in the most distant memories of grateful Humanity.

La pierre du cercueil est ton premier autel! [1]

Donna, se' tanto grande e tanto vali,
Che qual vuol grazia e a te non ricorre,
Sua disianza vuol volar senz' ali.
La tua benignità non pur soccorre
A chi dimanda, ma molte fiate
Liberamente al dimandar precorre.
In te misericordia, in te pietate,
In te magnificenza, in te s'aduna,
Quantunque in creatura è di bontate! [2]

AUGUSTE COMTE.

---

[1] Elisa Mercœur.
[2] Dante, 'Paradiso,' canto xxxiii.

TABLE OF CONTENTS.

GENERAL VIEW OF POSITIVISM.

CHAPTER I.

INTELLECTUAL CHARACTER OF POSITIVISM.

PAGE

The object of Philosophy is to present a systematic view of human life as a basis for modifying its imperfections 6

The Theological synthesis failed to include the practical side of human nature 7

But the Positive spirit originated in practical life 8

In human nature, and therefore in the Positive system, Affection is the preponderating element 10

The proper function of Intellect is the service of the Social Sympathies . 12

Under Theology the intellect was the slave of the heart; under Positivism its servant 13

The subordination of the intellect to the heart is the *Subjective Principle* of Positivism 16

Objective basis of the system; External Order of the World, as revealed by Science 16

By it the selfish affections are controlled; the unselfish strengthened . 18

Our conception of this External Order has been gradually growing from the earliest times, and is but just complete 19

Even where not modifiable, its influence on the character is of the greatest value 21

But in most cases we can modify it; and in these the knowledge of it forms the systematic basis of human nature 23

The chief difficulty of the Positive Synthesis was to complete our conception of the External Order, by extending it to Social phenomena . . 25

By the discovery of Sociological laws social questions are made paramount; and thus our *subjective principle* is satisfied without danger to free thought 27

Distinction between Abstract and Concrete laws. It is the former only that we require for the purpose before us 30

In our Theory of Development, the required Synthesis of Abstract conceptions already exists 32

Therefore we are in a position to proceed at once with the work of social regeneration 35

Error of identifying Positivism with Atheism, Materialism, Fatalism, or Optimism. Atheism, like Theology, discusses insoluble mysteries . 36

PAGE

Materialism is due to the encroachment of the lower sciences on the domain of the higher; an error which Positivism rectifies 39
Nor is Positivism fatalist, since it asserts the External Order to be modifiable 42
The charge of Optimism applies to Theology rather than to Positivism. The Positivist judges of all historical actions *relatively*, but does not justify them indiscriminately 43
The word *Positive* connotes all the highest intellectual attributes, and will ultimately have a moral significance 44

CHAPTER II.

SOCIAL ASPECT OF POSITIVISM.

The relation of Positivism to the French Revolution 47
The negative or destructive phase of the Revolution stimulated the desire of Progress, and consequently the study of social phenomena . . 47
The constructive phase of the Revolution. The first attempts to construct failed, being based on destructive principles 51
Counter-revolution from 1794 to 1830 53
Political stagnation between 1830 and 1848 54
The present position, 1848–1850. Republicanism involves the great principle of subordinating Politics to Morals 55
It gives prominence to the problem of reconciling Order and Progress . 56
It brings the metaphysical revolutionary schools into discredit . . 58
And it proves to all the necessity of a true spiritual power; a body of thinkers whose business is to study and to teach principles, holding aloof from political action 60
The need of a spiritual power is common to the whole Republic of Western Europe 63
This Republic consists of the Italian, Spanish, British, and German populations grouped round France as their centre 66
Relation of Positivism to the mediæval system, to which we owe the first attempt to separate spiritual from temporal power 68
But the mediæval attempt was premature; and Positivism will renew and complete it 71
The Ethical system of Positivism 73
Subjection of Self-love to Social love is the great ethical problem. The Social State of itself favours this result; but it may be hastened by organised and conscious effort 73
Intermediate between self-love and universal benevolence are the domestic affections: filial, fraternal, conjugal, paternal 75
Personal virtues placed upon a social basis 77
Moral education consists partly of scientific demonstration of ethical truth, but still more of culture of the higher sympathies 79
Organisation of Public Opinion 80
Commemoration of great men 81
The political motto of Positivism: Order and Progress 83
Progress, the development of Order 83
Analysis of Progress: material, physical, intellectual, and moral . . 84
Application of our principles to actual politics. All government must for the present be provisional 87

PAGE
Danger of attempting political reconstruction before spiritual . . 89
Politically what is wanted is Dictatorship, with liberty of speech and discussion 91
Such a dictatorship would be a step towards the separation of spiritual and temporal power 95
The motto of 1830, *Liberty and Public Order* 95
Liberty should be extended to Education 96
Order demands centralisation 98
Intimate connection of Liberty with Order 99

CHAPTER III.

ACTION OF POSITIVISM UPON THE WORKING CLASSES.

Positivism will not for the present recommend itself to the governing classes so much as to the People 101
The working man who accepts his position is favourably situated for the reception of comprehensive principles and generous sympathies . . 103
This the Convention felt; but they encouraged the People to seek political supremacy, for which they are not fit 105
It is only in exceptional cases that the People can be really 'sovereign' . 106
The truth involved in the expression is that the well-being of the people should be the one great object of government 107
The People's function is to assist the spiritual power in modifying the action of government 108
Their combined efforts result in the formation of Public Opinion . . 110
Public opinion involves, (1) principles of social conduct, (2) their acceptance by society at large, (3) an organ through which to enunciate them . 112
Working men's clubs 114
All three conditions of Public Opinion exist, but have not yet been combined 119
Spontaneous tendencies of the people in a right direction. Their Communism 120
Its new title of Socialism 122
Property is in its nature social, and needs control 123
But Positivism rejects the Communist solution of the problem. Property is to be controlled by moral not legal agencies 125
Individualisation of functions as necessary as co-operation . . . 126
Industry requires its captains as well as War 127
Communism is deficient in the historical spirit 128
In fact, as a system, it is worthless, though prompted by noble feelings . 128
Property is a public trust, not to be interfered with legally . . . 130
Inheritance favourable to its right employment 132
Intellect needs moral control as much as wealth 132
Action of organised public opinion upon Capitalists; Strikes . . 133
Public opinion must be based upon a sound system of education . . 136
Education has two stages; from birth to puberty, from puberty to adolescence. The first, consisting of physical and esthetic training, to be given at home 138
The second part consists of public lectures on the Sciences from Mathematics to Sociology 140
Travels of Apprentices 143
Concentration of study 143

PAGE

Governmental assistance not required, except for certain special institutions, and this only as a provisional measure 144
We are not ripe for this system at present; and Government must not attempt to hasten its introduction 146
Intellectual attitude of the people. Emancipation from theological belief . 148
From metaphysical doctrines 150
Their mistaken preference of literary and rhetorical talent to real intellectual power 150
Moral attitude of the people. The workman should regard himself as a public functionary 153
Ambition of power and wealth must be abandoned 155
The working classes are the best guarantee for Liberty and for Order, owing to their emancipation, their dislike of war, and their indifference to parliaments 158
The dictatorship provisionally required will be of popular origin . . 160

CHAPTER IV.

INFLUENCE OF POSITIVISM UPON WOMEN.

Women represent the affective element in our nature, as philosophers and people represent the intellectual and practical elements . . . 164
Women have stood aloof from the modern movement, because of its anti-historic character, and its failure to subordinate politics to morality . 165
But they will sympathise with the constructive tendencies of the new synthesis; and will distinguish sound philosophy from scientific specialities 167
Women's position in society. Like philosophers and people, their part is not to govern, but to modify 169
The united action of philosophers, women, and proletaries constitutes Moral Force 172
Superiority of the new spiritual power to the old. Self-regarding tendencies of Catholic doctrine 176
The spirit of Positivism, on the contrary, is essentially social. The Heart and the Intellect mutually strengthen each other . . . 177
Intellectual and moral affinities of women with Positivism . . . 180
Catholicism purified love, but did not directly strengthen it . . . 181
Women's influence over the working classes and their teachers . . 183
Their social influence in the *salon* 185
But the family is their principal sphere of action 187
Woman's mission as a wife. Conjugal love an education for universal sympathy 187
Conditions of marriage. Indissoluble monogamy 190
Perpetual widowhood 191
Woman's mission as a mother 193
Education of children belongs to mothers. They only can guide the development of character 193
Modern sophisms about Women's rights. The domesticity of her life follows from the principle of Separation of Powers 196
The position of the sexes tends to differentiation rather than identity . 198
Woman to be maintained by Man 199

PAGE
The education of women should be identical with that of men . . 201
Women's privileges. Their mission is in itself a privilege . . . 204
They will receive honour and worship from men 204
Development of mediæval chivalry 205
The practice of Prayer, so far from disappearing, is purified and strengthened in Positive religion 208
The worship of Woman a preparation for the worship of Humanity . . 211
Exceptional women. Joan of Arc 212
It is for women to introduce Positivism into the Southern nations . . 215

CHAPTER V.

RELATION OF POSITIVISM TO ART.

Positivism when complete is as favourable to imagination, as, when incomplete, it was unfavourable to it 220
Esthetic talent is for the adornment of life, not for its government . . 222
The political influence of literary men a deplorable sign and source of anarchy 224
Theory of Art 227
Art is the idealised representation of Fact 227
Poetry is intermediate between Philosophy and Polity . . . 228
Art calls each element of our nature into harmonious action . . . 230
Three stages in the esthetic process; Imitation, Idealisation, Expression . 231
Classification of the arts on the principle of decreasing generality, and increasing intensity 234
Poetry 234
Music 235
Painting, Sculpture, Architecture 236
The conditions most favourable to Art have never yet been combined . 236
Neither in Polytheism 237
Nor under the Mediæval system 238
Much less in modern times 239
Under Positivism the conditions will all be favourable; owing to its fixity of principles, and nobler moral culture 240
Predisposing influence of education 242
Relation of Art to Religion 243
Idealisation of historical types 244
Art requires the highest education; but little special instruction . . 245
Artists as a class will disappear. Their function will be appropriated by the three classes composing the spiritual power 247
Philosophic poetry 248
Identity of esthetic and scientific genius 249
Women's poetry 250
People's poetry 251
Value of Art in the present crisis 252
1. Construction of normal types on the basis furnished by philosophy . 253
2. Pictures of the Future of Man 253
3. Contrasts with the Past 254
Summary of the chapter 255

CHAPTER VI.

RELIGION OF HUMANITY.

	PAGE
Recapitulation of the results obtained	257
Harmony of three sides of human nature	257
Practical object of human life	258
The Spiritual Power	260
Priests	260
Women	260
The People	261
Gradual perception of the great problem of life	262
Humanity is the centre to which every aspect of Positivism converges	263
With the discovery of sociological laws, a synthesis on the basis of Science becomes possible, science being now concentrated on the study of Humanity	265
Statical Aspects of Humanity	267
Dynamical aspects	268
Inorganic and organic sciences elevated by their connection with the supreme science of Humanity	270
The new religion is even more favourable to Art than to Science	271
Poetic portraiture of the new Supreme Being	272
Contrast with former divinities	273
Organisation of festivals, representing statical and dynamical aspects of Humanity	274
Worship of the dead. Commemoration of their service	276
All the arts may co-operate in the service of religion	279
Positivism is the successor of Christianity, and surpasses it	280
Positivist prayer	283
Superiority of Positive morality	283
Rise of the new Spiritual power	286
Temporal power will always be necessary, but its action will be modified by the spiritual	287
Substitution of duties for rights	289
Consensus of the social organism	291
Continuity of the past with the present	292
Necessity of a spiritual power to study and teach these truths; standing apart from the temporal power, and thus securing alike freedom and convergence	293
Nutritive functions of Humanity, performed by Capitalists, as the temporal power	297
These are modified by the cerebral functions, performed by the three elements of the spiritual power	298
Capitalists not to be coerced politically	300
Inheritance to be respected	300
Women and priests to have their material subsistence guaranteed	301
Normal relation of priests, people, and capitalists	303
We are not yet ripe for the normal state. But the revolution of 1848 is a step towards it	304
First revolutionary motto; Liberty and Equality	304
Second motto; Liberty and Order	305
Third motto; Order and Progress	305
Provisional policy for the period of transition	306

PAGE
Popular dictatorship with freedom of speech 307
Positive Committee for Western Europe 309
Occidental navy 310
International coinage 311
Occidental school 311
Flag for the Western Republic 311
Colonial and Foreign Associates of the Committee, the action of which will ultimately extend to the whole human race 313
Russia 315
Mohammedan countries 315
India 315
China. Japan 315
Africa 315
Conclusion. Perfection of the Positivist ideal 316
Corruption of Monotheism 320

SYSTEM OF POSITIVE POLITY.

INTRODUCTORY PRINCIPLES.

CHAPTER I.

GENERAL INDICATION OF THESE PRINCIPLES.

Prefatory Remarks, pp. 325–330.

Positivism a co-ordination of the three aspects of human nature . . 325
Worship and Discipline must rest on Doctrine 326
This Treatise, though chiefly doctrinal (sociology), will also touch on discipline (sociocracy) and worship (sociolatry) 327
Reaction of Feeling on Thought favoured by pressure of social needs . 328
Legitimacy of Logic of Feeling 329

Divisions of this Chapter: I. Purpose aimed at in this Introduction, pp. 331–343.

Contradictions in conception of God due to his absolute independence . 331
In the dependence of the new Supreme Being on the external order lies its moral and social superiority 332
Importance of this order (*a*) individually; (*b*) socially . . . 334
(*a*) It is an essential constituent of Life in every phase, whether material or moral 335
It has been partly recognised from the earliest ages 335
Positivism represents it more completely than theology . . . 336
(*b*) This order is a bond of union 337
It establishes 1. Community of conviction 338
2. Community of action 338

PAGE
3. Discipline of pride 338
4. Sympathy 339
Social mission of science the sole means of co-ordinating it . . . 339
Apart from such considerations, scientific study irrational and immoral . 340
The subjection of Science to this moral discipline not chimerical . . 341

II. Nature of the Scientific Synthesis. Distinction of Abstract and Concrete, pp. 343–354.

The Synthesis embraces only the series of abstract or irreducible conceptions; not including the mass of concrete or composite conceptions . 343
Difficulty of passage from abstract to concrete. Here scientific dogmatism finds its limits, and room for judicious empiricism must always be left . 344
Respective functions of Dogmatism and Empiricism 346
Difficulty of Abstraction in higher Sciences 348
Gradual development of the distinction between abstract and concrete . 348
Synthesis of concrete science impossible and needless . . . 349
Concrete studies should be limited by considerations of utility as belonging to domain of Practice, not of Theory 351
This restriction no less applicable to sociology than to other sciences . 352

III. Plan of Scientific Synthesis. Combination of objective with subjective method, pp. 355–368.

Division of Natural Philosophy into Cosmology and Biology . . 355
Conceptions of the World, and of Life, mutually necessary . . . 355
Phenomena unintelligible without percipient 356
Life, from lowest to highest functions, implies adjustment of organism to environment, of subject to object 356
Law, i.e. constancy amidst variation, implies harmony of biological and cosmological relations 357
This harmony variable; and sociology deals with the laws of its variation in man 358
Order of succession. Objective method, passing from the World to Man, predominates 359
But the subjective Method, from Man to the World, though hitherto provisional and theological, has a permanent and positive part to play . 361
That part consists in constant maintenance of constructive and human stand-point 362
Relation of the two methods in author's works 363
The harmony of the two methods constitutes Logic in its widest sense . 364
This harmony an immediate result of the conception of Humanity . . 364
Combination in Positive Synthesis of Logic of Signs, with Logic of Images, and Logic of Feeling 365

CHAPTER II.

INDIRECT INTRODUCTION, MAINLY ANALYTIC; COSMOLOGY.

Summary of preceding chapter 369
Special difficulty and importance of discipline in Cosmology . . . 369

PAGE

Division of Cosmology into celestial and terrestrial: i.e. laws accessible, and laws inaccessible to human intervention 371
Philosophical characteristics of each 372
Religious aspects 372

Celestial Cosmology, pp. 373–415.

Division into abstract and concrete aspect: Mathematics and Astronomy . 373

Mathematics, pp. 373–403.

Intellectual and moral value of Mathematics 374
Their present degradation 375
Proposed work on the subject 376
Division into Calculus, Geometry, and Mechanics 376
Their order follows the general plan of scientific classification . . 376
Reasons for studying Calculus in combination with Geometry . . 378
Mechanics to be studied more separately 379
Necessity of restricting mathematical studies 380–387
Abuse of Algebra 380
Neglect of inductive studies 381
Moral danger of Mathematics studied in this spirit 382
Controlling principle; each science to be studied sufficiently for the requirements of that which stands next above it in the scale . . . 383
Sociology, the final science, should control all 383
Exceptional cases may be left to practical men 385
Social statics and dynamics can alone elevate Science to her true rank . 385
Science as degenerate as theology; but, unlike theology, susceptible of regeneration 386
Calculus viewed separately 387
Geometry viewed separately 389
Combination of abstract and concrete aspect in Cartesian geometry . . 390
All phenomena might be represented by equations, but for the practical difficulties 390
Transcendental analysis 392
Wallis 392
Leibnitz 393
Importance of studying methods in combination with doctrines . . 394
Mechanics 395–402
In Geometry we consider the simplest form of passive Existence; in Mechanics, of Existence combined with Activity 395
Intimate connection of Statics with Dynamics 396
Abstraction in Mechanics. Inertia 397
Subject-matter of Mechanics. Composition of Motions . . . 398
Bases of the Science. 1. Logical artifice of Inertia 399
2. The three laws of Motion 399
Application of these laws in other subjects 400
Systematisation of the science 401
Limits of its range 401
Summary 402

Astronomy, pp. 403–415.

PAGE

Logical features of Astronomy. 1. Observation and induction . . 404
2. Art of Hypothesis 405
3. Exercise of abstraction 405
Scientific value of Astronomy. Conception of invariable Order . . 406
Permanent importance of Astronomy as an instrument of discipline . . 407
Relativity of knowledge 409
Moral influence of this relativity 410
Systematisation of the science 411
Restriction to solar system 411
Futility of sidereal astronomy 412
Even the solar system should be regarded from the terrestrial point of view . 413
Constitution of the Science. Astronomy presupposes Geometry . . 414
Influence of Mechanics on Astronomy; uniting it with other branches of Natural Philosophy 415

Terrestrial Cosmology, pp. 415–454.

Interval between Astronomy and Biology formed first by Chemistry, then by Physics 416

Physics, pp. 417–430.

Proper position of Physics in the scale of Sciences 417
Its influence on the inductive faculty 418
Induction more important than Deduction 418
Development of experimental method 420
Atomic theory viewed as a logical artifice 421
Metaphysical aberrations, imaginary fluids, ethers, &c. . . . 421
Encroachments of Algebra 423
Reorganisation of Physics depends on the general reorganising movement . 425
Constitution of the Science 425
Attempt to reduce its various branches to one chimerical because they depend on multiplicity of senses 425
Deficiency of sciences corresponding to senses of taste and smell . . 426
Classification of the Physical Sciences 428
Barology, Thermology, Optics, Acoustics, Electrology . . . 428
Proper limitations of the Science 429

Chemistry, pp. 430–454.

Its logical aspects. More removed than Physics from the danger of over-strained deduction 430
It affords glimpses of the comparative methods 432
It has developed the art of scientific nomenclature 432
Its scientific aspects 434
It deals with the most complex mode of inorganic existence . . . 434
Its influence on industrial progress 435
It prepares the way for Biology 436
Chemistry more amenable to social discipline than previous sciences . 437
Isolated culture of each science in inverse proportion to its rank in the scale 438
First rise of systematic chemistry, under Böerhaave and Stahl . . 440

PAGE
Yet the proper period of its isolated culture has already past . . 441
Urgency and possibility of discipline in Chemistry 442
Unity of purpose in chemical science; prevision of compounds from knowledge of components 444
Futility of distinction between organic and inorganic chemistry . . 444
Dualism of combinations: a subjective artifice 446
Objections to Dualism 447
Its utility 447
Logical rule of the simplest hypothesis 448
Analogy of this artifice to that of Inertia, or to Atomic hypothesis . . 449
Logical necessity of Dualism in other subjects 449
Arrangement of the science 450
1. Study of chemical combination 450
2. Analysis of Air and Water 450
Its historical importance 451
Its bearing on Biology 452
3. Study of the elementary bodies 452
4. Study of compound bodies, arranged according to degree of complexity. 453
Endless divergence of chemical studies as now pursued . . . 453

CHAPTER III.

DIRECT AND SYNTHETIC INTRODUCTION; BIOLOGY.

Prefatory Remarks, pp. 456–474.

Relativity of knowledge now rests on Biology, as formerly on Astronomy . 456
Isolated study of Biology; rapidity of its degradation . . . 457
Inroads on the fundamental principles of the Science . . . 459
Confused ideas of classification 460
Stagnation of cerebral physiology 460
Encroachments of chemists 460
These errors intensified in Germany 461
Example of Blainville 462
Need of Sociological discipline 463
Distinction of organic and inorganic 464
Ancient conception of three kingdoms; a basis for an objective synthesis . 465
Rise of Physics and Chemistry showed objective synthesis to be impossible; subjective synthesis must await rise of sociology . . . 466
Binary and ternary modes of expressing series of the sciences . . 467
Coalescence of the animal and vegetable kingdoms 468
Distinction of Organic and Inorganic is the final blow to all objective synthesis 468
Proximity in time of positive Biology to Sociology 469
Error of old synthesis not in being subjective but in being absolute . . 470
Modern inversion of relative importance of Astronomy and Biology . . 471
Exemplified by Descartes after failures of his objective and his subjective synthesis 472
Speedy reconstruction of Biology under Sociological auspices . . . 473

Divisions of the Chapter: I. Subject Matter of Biology. Abstract Theory of Life, pp. 474–517. *Vegetal Life, pp.* 474–482.

PAGE

General characteristics of Life. 1. Renovation of particles; its connection with higher phenomena 475
Vitality restricted to certain elements, and in these is temporary . . 475
Moral and social bearings of the law of Renovation 476
2. Law of Death 476
Law of Death not a mere consequence of the preceding . . . 477
Sociological bearings of this law 478
3. Law of Reproduction 478
It cannot be explained by inorganic science 479
Permanence of Species 479
General remarks on Vegetal Life 481

Animal Life, pp. 482–501.

Its dependence upon Vegetable Life 482
First beginning of a biological hierarchy 483
Sensibility and Contractility 484
Laws of intermittence and habit 484
Instinctive life intervening between sensation and contraction . . 485
Various modes of instinctive life 486
Connection of Instincts with mode of alimentation 488
Possibility of modifying alimentation 488
Mental and social reaction of carnivorous alimentation . . . 489
Three laws of animal life. 1. Law of intermittence 490
2. Law of Habit 491
Imitation dependent on habit 491
3. Law of Exercise 492
Hereditary modifications 493
Consensus of animal life: resulting from subordination to vegetal life . 493
Two modes of this subordination 494
1. Personal mode 494
2. Social mode 495
Association of animals with man 496
Biocratic League under the leadership of Humanity for development of Earth's resources 498
Elimination of useless or noxious races 498
Limits of the power of this league 499
Biocratic league presupposes Sociocracy 500

Social Life, pp. 501–508.

Tendency in all animal species towards formation of a collective organism . 501
But Sociality the subject of a distinct science, because only developed by historic Continuity 502
Biology as an isolated science irrational 503
Still it controls and prepares the way for Sociology 504
Germs of sociological laws in animal races 505
1. Law of three stages 505
2. Hierarchy of scientific conceptions 506
3. Law of evolution of activity 507

PAGE
Limitation of Social State to Human Race 508–516
Struggle of races for superiority resulting in victory of one . . . 508
Reasons why the victory was gained by the human species . . . 510
Man capable of carnivorous food, though not restricted to it . . . 510
Cerebral functions. 1. Man superior on the whole in social instincts . 511
Prolonged infancy 512
2. Intellectual superiority of human species exaggerated, but real . . 513
Vocal organs of Man 514
3. Practical qualities better combined in Man than elsewhere . . 514
Muscular and sensorial characters 515
Nudity 515
Review of results obtained. Successive Scale of Being . . . 517

II. Scheme of Treatise on Abstract Biology, pp. 517–540.

Scientific principles 517–525
Twofold adjustment: (*a*) of organism and environment: (*b*) of organ and function 517
Subordination of the second adjustment to the first 519
Function the result of action between Organism and Environment. Extension of this truth to Cosmology 520
Separate study of anatomy and physiology necessary as a preparation . 522
Necessity of statical conception to fix dynamical thought . . . 523
Progress made by Bichat in correlating anatomy with physiology . . 524
Logical principles 525–532
Necessity of mathematical training 525
Inductive logic 526
Pathological method 526
Method of comparisons 528
Present mode of regarding it too limited 528
Biological classification 529
Errors of received views of Classification 530
1. It is presented as an objective reality 530
2. It is incomplete; not comprehending either Vegetal or Social life . . 531

Syllabus of Biological Course, pp. 532–540.

1. Preamble: containing three lectures on Method; four on Histology and Anatomy; five on Classification 532
Connection of Organ with Function never to be lost sight of . . . 533
2. Main subject of the course. The nine Laws of Life; sixteen lectures . 535
3. Conclusion; containing three lectures on Consensus; four on action of Environment; five on reaction of Organism 536
The Consensus 536
The environment 537
Reaction of organism 539

III. Theory of cerebral functions, pp. 540–593.

Appreciation of Gall's work 541
Character of present theory; (1) subjective, i.e. functional; (2) dependent on sociological observation, checked by Zoology 542

PAGE

Connection of Brain with the rest of the Organism too much neglected by Gall 543
From the study of cerebral functions we may determine the number of cerebral organs, and their relative position 545
But their form, size, and structure must be reserved for objective investigation 547
General classification of cerebral functions 548–557
Acceptance of Gall's distinction of affective from intellectual functions; rejection of his distinction of propensities from feelings . . . 549
Division of moral functions into *Heart* and *Character* . . . 551
Affection the chief source of spontaneity and of unity . . . 554
Affection, unlike Intellect or Activity, never completely intermittent . . 556
Affective functions 557–571
Distinction of personal from social feeling 558
Anatomical relation of personal and social instincts 559
Intermediate propensities 560
Enumeration of egoistic propensities. 1. Self-preservation . . . 561
Preservation of Race. 2. Sexual instinct. 3. Maternal instinct . . 562
4. Destructive or Military Instinct. 5. Constructive or Industrial instinct 562
Intermediate propensities. 6. Love of Praise 563
7. Love of Power 564
Social instincts; possessed by lower animals 564
Social Instincts the source of Unity 565
Social Instincts: 8. Attachment; 9. Veneration; 10. Humanity . . 566
Localisation of Social Instincts 569
Classification of characters in accordance with predominant propensities . 570
Intellectual functions 571–584
Defects of Gall's view due to absence of sociological theory . . . 571
His multiplication of distinctions; and misapprehension of the Senses . 573
His erroneous view of Memory and Imagination 573
The true view of these processes. They are composite intellectual results . 574
Even Judgment is composite 575
Intellectual functions. Distinction of Conception from Expression . . 578
Conception divided into contemplation and meditation . . . 579
Two organs of Contemplation. 11. Concrete and synthetic; 12. Abstract and analytic 580
Two organs of Meditation. 13. Inductive; 14. Deductive . . . 581
15. Organ of Expression 582
Active functions. 16. Courage; 17. Caution; 18. Firmness . . 584
Consensus of Cerebral organs 586
Relations of Brain with organs of animal and vegetal life . . . 588
History of the growth of this Theory 588
Statical conclusions much more uncertain than the dynamical . . 589
Practical applications of the Theory 592
Its sociological bearing 592
Its logical bearing 593
Conclusion 593

APPENDIX:

Speech at Blainville's funeral 595
Lucie 603
Les Pensées d'une fleur 612
Letter on Social Commemoration 613

SYSTEM

OF

POSITIVE POLITY.

A GENERAL VIEW OF POSITIVISM.

We tire of thinking and even of acting; we never tire of loving.

In the following series of systematic essays upon Positivism, the essential principles of the doctrine are first considered; I then point out the agencies by which its propagation will be effected; and I conclude by describing certain additional features indispensable to its completeness. My treatment of these questions will of course be summary: yet it will suffice, I hope, to overcome several excusable but unfounded prejudices. It will enable any competent reader to assure himself that the new general doctrine aims at something more than satisfying the Intellect; that it is in reality quite as favourable to Feeling and even to Imagination.

INTRODUCTORY REMARKS.

Positivism consists essentially of a Philosophy and a Polity. These can never be dissevered; the former being the basis, and the latter the end of one comprehensive system, in which our intellectual faculties and our social sympathies are brought into close correlation with each other. For, in the first place, the science of Society, besides being more important than any other, supplies the only logical and scientific link by which all our varied observations of phenomena can be brought into one

consistent whole.[1] Of this science it is even more true than of any of the preceding sciences, that its real character cannot be understood without explaining its exact relation in all general features with the art corresponding to it. Now here we find a coincidence which is assuredly not fortuitous. At the very time when the theory of society is being laid down, an immense sphere is opened for the application of that theory; the direction, namely, of the social regeneration of Western Europe. For, if we take another point of view, and look at the great crisis of modern history, as its character is displayed in the natural course of events, it becomes every day more evident how hopeless is the task of reconstructing political institutions without the previous remodelling of opinion and of life. To form then a satisfactory synthesis of all human conceptions is the most urgent of our social wants: and it is needed equally for the sake of Order and of Progress. During the gradual accomplishment of this great philosophical work, a new moral power will arise spontaneously throughout the West, which, as its influence increases, will lay down a definite basis for the reorganisation of society. It will offer a general system of education for the adoption of all civilised nations, and by this means will supply in every department of public and private life fixed principles of judgment and of conduct. Thus the intellectual movement and the social crisis will be brought continually into close connection with each other. Both will combine to prepare the advanced portion of humanity for the acceptance of a true spiritual power, a power more coherent, as well as more progressive, than the noble but premature attempt of mediæval Catholicism.

The primary object, then, of Positivism is twofold: to generalise our scientific conceptions, and to systematise the art of social life. These are but two aspects of one and the same problem. They will form the subjects of the two first chapters of this work. I shall first explain the general spirit of the new philosophy. I shall then show its necessary connection with

[1] The establishment of this great principle is the most important result of my 'System of Positive Philosophy.' This work was published 1830–1842, with the title of 'Course of Positive Philosophy,' because it was based upon a course of lectures delivered 1826–1829. But since that time I have always given it the more appropriate name of System. Should the work reach a second edition, the correction will be made formally: meanwhile, this will, I hope, remove all misconception on the subject.

the whole course of that vast revolution which is now about to terminate under its guidance in social reconstruction.

This will lead us naturally to another question. The regenerating doctrine cannot do its work without adherents: in what quarter should we hope to find them? Now, with individual exceptions of great value, we cannot expect the adhesion of any of the upper classes in society. They are all more or less under the influence of baseless metaphysical theories, and of aristocratic self-seeking. They are absorbed in blind political agitation, and in disputes for the possession of the useless remnants of the old theological and military system. Their action only tends to prolong the revolutionary state indefinitely, and can never result in true social renovation.

Whether we regard its intellectual character or its social objects, it is certain that Positivism must look elsewhere for support. It will find a welcome in those classes only whose good sense has been left unimpaired by our vicious system of education, and whose generous sympathies are allowed to develope themselves freely. It is among Women, therefore, and among the Working classes that the heartiest supporters of the new doctrine will be found. It is intended, indeed, ultimately for all classes of society. But it will never gain much real influence over the higher ranks till it is forced upon their notice by these powerful patrons. When the work of spiritual reorganisation is completed, it is on them that its maintenance will principally depend; and so too, their combined aid is necessary for its commencement. Having but little influence in political government, they are the more likely to appreciate the need of a moral government, the special object of which it will be to protect them against the oppressive action of the temporal power.

In the third chapter, therefore, I shall explain the mode in which philosophers and working men will co-operate. Both have been prepared for this coalition by the general course which modern history has taken, and it offers now the only hope we have of really decisive action. We shall find that the efforts of Positivism to regulate and develope the natural tendencies of the people, make it, even from the intellectual point of view, more coherent and complete.

But there is another and a more unexpected source from which Positivism will obtain support; and not till then will

its true character and the full extent of its constructive power be appreciated. I shall show in the fourth chapter how eminently calculated is the Positive doctrine to raise and regulate the social condition of Women. It is from the feminine aspect only that human life, whether individually or collectively considered, can really be comprehended as a whole. For the only basis on which a system really embracing all the requirements of life can be formed, is the subordination of intellect to social feeling: a subordination which we find directly represented in the womanly type of character, whether regarded in its personal or social relations.

Although these questions cannot be treated fully in the present work, I hope to convince my readers that Positivism is more in accordance with the spontaneous tendencies of the people and of women than Catholicism, and is therefore better qualified to institute a spiritual power. It should be observed that the ground on which the support of both these classes is obtained is, that Positivism is the only system which can supersede the various subversive schemes that are growing every day more dangerous to all the relations of domestic and social life. Yet the tendency of the doctrine is to elevate the character of both of these classes; and it gives a most energetic sanction to all their legitimate aspirations.

Thus it is that a philosophy originating in speculations of the most abstract character, is found applicable not merely to every department of practical life, but also to the sphere of our moral nature. But to complete the proof of its universality I have still to speak of another very essential feature. I shall show, in spite of prejudices which exist very naturally on this point, that Positivism is eminently calculated to call the Imaginative faculties into exercise. It is by these faculties that the unity of human nature is most distinctly represented: they are themselves intellectual, but their field lies principally in our moral nature, and the result of their operation is to influence the active powers. The subject of Women treated in the fourth chapter, will lead me by a natural transition to speak in the fifth of the Esthetic aspects of Positivism. I shall attempt to show that the new doctrine by the very fact of embracing the whole range of human relations in the spirit of reality, discloses the true theory of Art, which has hitherto been so great a deficiency in our speculative conceptions. The

principle of the theory is that, in co-ordinating the primary functions of Humanity, Positivism places the Idealities of the poet midway between the Ideas of the philosopher and the Realities of the statesman. We see from this theory how it is that the poetical power of Positivism cannot be manifested at present. We must wait until moral and mental regeneration has advanced far enough to awaken the sympathies which naturally belong to it, and on which Art in its renewed state must depend for the future. The first mental and social shock once passed, Poetry will at last take her proper rank. She will lead Humanity onward towards a future which is now no longer vague and visionary, while at the same time she enables us to pay due honour to all phases of the past. The great object which Positivism sets before us individually and socially, is the endeavour to become more perfect. The highest importance is attached therefore to the imaginative faculties, because in every sphere with which they deal they stimulate the sense of perfection. Limited as my explanations in this work must be, I shall be able to show that Positivism, while opening out a new and wide field for art, supplies in the same spontaneous way new means of expression.

I shall thus have sketched with some detail the true character of the regenerating doctrine. All its principal aspects will have been considered. Beginning with its philosophical basis, I pass by natural transitions to its political purpose; thence to its action upon the people, its influence with women, and lastly, to its esthetic power. In concluding this review, which is but the introduction to a larger treatise, I have only to speak of the conception which unites all these various aspects. As summed up in the positivist motto, *Love*, *Order*, *Progress*, they lead us to the conception of Humanity, which implicitly involves and gives new force to each of them. Rightly interpreting this conception, we view Positivism at last as a complete and consistent whole. The subject will naturally lead us to speak in general terms of the future progress of social regeneration, as far as the history of the past enables us to foresee it. The movement originates in France, and is limited at first to the great family of Western nations. I shall show that it will afterwards extend, in accordance with definite laws, to the rest of the white race, and finally to the other two great races of man.

CHAPTER I.

THE INTELLECTUAL CHARACTER OF POSITIVISM.

The object of Philosophy is to present a systematic view of human life as a basis for modifying its imperfections.

THE object of all true Philosophy is to frame a system which shall comprehend human life under every aspect, social as well as individual. It embraces, therefore, the three kinds of phenomena of which our life consists, Thoughts, Feelings, and Actions. Under all these aspects, the growth of Humanity is primarily spontaneous; and the basis upon which all wise attempts to modify it should proceed, can only be furnished by an exact acquaintance with the natural process. We are, however, able to modify this process systematically; and the importance of this is extreme, since we can thereby greatly diminish the partial deviations, the disastrous delays, and the grave inconsistencies to which so complex a growth would be liable were it left entirely to itself. To effect this necessary intervention is the proper sphere of politics. But a right conception cannot be formed of it without the aid of the philosopher, whose business it is to define and amend the principles on which it is conducted. With this object in view the philosopher endeavours to co-ordinate the various elements of man's existence, so that it may be conceived of theoretically as an integral whole. His synthesis can only be valid in so far as it is an exact and complete representation of the relations naturally existing. The first condition is therefore that these relations be carefully studied. When the philosopher, instead of forming such a synthesis, attempts to interfere more directly with the course of practical life, he commits the error of usurping the province of the statesman, to whom all practical measures exclusively belong. Philosophy and Politics are the two principal functions of the great social organism. Morality, systematically considered, forms the connecting link and at the same time the line of demarcation between them. It is the most important application

of philosophy, and it gives a general direction to polity. Natural morality, that is to say, the various emotions of our moral nature, will, as I have shown in my previous work, always govern the speculations of the one and the operations of the other. This I shall explain more fully.

But the synthesis, which it is the social function of Philosophy to construct, will neither be real nor permanent, unless it embraces every department of human nature, whether speculative, affective, or practical. These three orders of phenomena react upon each other so intimately, that any system which does not include all of them must inevitably be unreal and inadequate. Yet it is only in the present day, when Philosophy is reaching the positive stage, that this which is her highest and most essential mission can be fully apprehended.

The Theological synthesis failed to include the practical side of human nature.

The Theological synthesis depended exclusively upon our affective nature; and to this is owing its original supremacy and its ultimate decline. For a long time its influence over all our highest speculations was paramount. This was especially the case during the Polytheistic period, when Imagination and Feeling still retained their sway under very slight restraint from the reasoning faculties. Yet even during the time of its highest development, intellectually and socially, theology exercised no real control over practical life. It reacted, of course, upon it to some extent, but the effects of this were in most cases far more apparent than real. There was a natural antagonism between them, which though at first hardly perceived, went on increasing till at last it brought about the entire destruction of the theological fabric. A system so purely subjective could not harmonise with the necessarily objective tendencies and stubborn realities of practical life. Theology asserted all phenomena to be under the dominion of Wills more or less arbitrary: whereas in practical life men were led more and more clearly to the conception of invariable laws; since without laws human action would have admitted of no rule or plan. In consequence of this utter inability of theology to deal with practical life, its treatment of speculative and even of moral problems was exceedingly imperfect, such problems being all more or less dependent on the practical necessities of life. To present a perfectly synthetic view of human nature was, then, impossible as long as the influence of theology lasted; because the Intellect was impelled by Feeling and by the Active powers in two

totally different directions. The failure of all metaphysical attempts to form a synthesis need not be dwelt upon here. Metaphysicians, in spite of their claims to absolute truth, have never been able to supersede theology in questions of feeling, and have proved still more inadequate in practical questions. Ontology, even when it was most triumphant in the schools, was always limited to subjects of a purely intellectual nature; and even here its abstractions, useless in themselves, dealt only with the case of individual development, the metaphysical spirit being thoroughly incompatible with the social point of view. In my work on Positive Philosophy I have clearly proved that it constitutes only a transitory phase of mind, and is totally inadequate for any constructive purpose. For a time it was supreme; but its utility lay simply in its revolutionary tendencies. It aided the preliminary development of Humanity by its gradual inroads upon Theology, which, though in ancient times entrusted with the sole direction of society, had long since become in every respect utterly retrograde.

But the Positive spirit originated in practical life.

But all Positive speculations owe their first origin to the occupations of practical life; and consequently, they have always given some indication of their capacity for regulating our active powers, which had been omitted from every former synthesis. Their value in this respect has been and still is materially impaired by their want of breadth, and their isolated and incoherent character; but it has always been instinctively felt. The importance that we attach to theories which teach the laws of phenomena, and give us the power of prevision, is chiefly due to the fact that they alone can regulate our otherwise blind action upon the external world. Hence it is that while the Positive spirit has been growing more and more theoretical, and has gradually extended to every department of speculation, it has never lost the practical tendencies which it derived from its source; and this even in the case of researches useless in themselves, and only to be justified as logical exercises. From its first origin in mathematics and astronomy, it has always shown its tendency to systematise the whole of our conceptions in every new subject which has been brought within the scope of its fundamental principle. It exercised for a long time a modifying influence upon theological and metaphysical principles, which has gone on increasing; and since the time of Descartes and Bacon it has become evident that it is destined

to supersede them altogether. Positivism has gradually taken possession of the preliminary sciences of Physics and Biology, and in these the old system no longer prevails. All that remained was to complete the range of its influence by including the study of social phenomena. For this study metaphysics had proved incompetent; by theological thinkers it had only been pursued indirectly and empirically as a condition of government. I believe that my work on Positive Philosophy has so far supplied what was wanting. I think it must now be clear to all that the Positive spirit can embrace the entire range of thought without lessening, or rather with the effect of strengthening its original tendency to regulate practical life. And it is a further guarantee for the stability of the new intellectual synthesis that Social science, which is the final result of our researches, gives them that systematic character in which they had hitherto been wanting, by supplying the only connecting link of which they all admit.

This conception is already adopted by all true thinkers. All must now acknowledge that the Positive spirit tends necessarily towards the formation of a comprehensive and durable system, in which every practical as well as speculative subject shall be included. But such a system would still be far from realising that universal character without which Positivism would be incompetent to supersede Theology in the spiritual government of Humanity. For the element which really preponderates in every human being, that is to say, Affection, would still be left untouched. This element it is, and this only, which gives a stimulus and direction to the other two parts of our nature; without it the one would waste its force in ill-conceived, or, at least, useless studies, and the other in barren or even dangerous contention. With this immense deficiency the combination of our theoretical and active powers would be fruitless, because it would lack the only principle which could ensure its real and permanent stability. The failure would be even greater than the failure of Theology in dealing with practical questions; for the unity of human nature cannot really be made to depend either on the rational or the active faculties. In the life of the individual, and, still more, in the life of the race, the basis of unity, as I shall show in the fourth chapter, must always be Feeling. It is to the fact that theology arose spontaneously from feeling that its influence is for the

most part due. And although theology is now palpably on the decline, yet it will still retain in principle at least, some legitimate claims to the direction of society so long as the new philosophy fails to occupy this important vantage-ground. We come then to the final conditions with which the modern synthesis must comply. Without neglecting the spheres of Thought and Action it must also comprehend the moral sphere; and the very principle on which its claim to universality rests must be derived from Feeling. Then, and not till then, can the claims of theology be finally set aside. For then the new system will have surpassed the old in that which is the one essential purpose of all general doctrines. It will have shown itself able to effect what no other doctrine has done, that is, to bring the three primary elements of our nature into harmony. If Positivism were to prove incapable of satisfying this condition, we must give up all hope of systematisation of any kind. For while Positive principles are now sufficiently developed to neutralise those of Theology, yet, on the other hand, the influence of Theology would continue to be far greater. Hence it is that many conscientious thinkers in the present day are so inclined to despair for the future of society. They see that the old principles on which society has been governed must finally become powerless. What they do not see is that a new basis for morality is being gradually laid down. Their theories are too imperfect and incoherent to show them the direction towards which the present time is ultimately tending. It must be owned, too, that their view seems borne out by the present character of the Positive method. While all allow its utility in the treatment of practical, and even of speculative, problems, it seems to most men, and very naturally, quite unfit to deal with questions of morality.

In human nature, and therefore in the Positive system, Affection is the preponderating element.

But on closer examination they will see reason to rectify their judgment. They will see that the hardness with which Positive science has been justly reproached, is due to the speciality and want of purpose with which it has hitherto been pursued, and is not at all inherent in its nature. Originating as it did in the necessities of our material nature, which for a long time restricted it to the study of the inorganic world, it has not till now become sufficiently complete or systematic to harmonise well with our moral nature. But now that it is brought to bear upon social questions, which for the future will

form its most important field, it loses all the defects peculiar to its long period of infancy. The very attribute of reality which is claimed by the new philosophy, leads it to treat all subjects from the moral still more than from the intellectual side. The necessity of assigning with exact truth the place occupied by the intellect and by the heart in the organisation of human nature and of society, leads to the decision that Affection must be the central point of the synthesis. In the treatment of social questions Positive science will be found utterly to discard those proud illusions of the supremacy of reason, to which it had been liable during its preliminary stages. Ratifying, in this respect, the common experience of men even more forcibly than Catholicism, it teaches us that individual happiness and public welfare are far more dependent upon the heart than upon the intellect. But, independently of this, the question of co-ordinating the faculties of our nature will convince us that the only basis on which they can be brought into harmonious union, is the preponderance of Affection over Reason, and even over Activity.

The fact that intellect, as well as social sympathy, is a distinctive attribute of our nature, might lead us to suppose that either of these two might be supreme, and therefore that there might be more than one method of establishing unity. The fact, however, is that there is only one; because these two elements are by no means equal in their fitness for assuming the first place. Whether we look at the distinctive qualities of each, or at the degree of force which they possess, it is easy to see that the only position for which the intellect is permanently adapted is to be the servant of the social sympathies. If, instead of being content with this honourable post, it aspires to become supreme, its ambitious aims, which are never realised, result simply in the most deplorable disorder.

Even with the individual, it is impossible to establish permanent harmony between our various impulses, except by giving complete supremacy to the feeling which prompts the sincere and habitual desire of doing good. This feeling is, no doubt, like the rest, in itself blind; it has to learn from reason the right means of obtaining satisfaction; and our active faculties are then called into requisition to apply those means. But common experience proves that after all the principal condition of right action is the benevolent impulse; with the ordinary

amount of intellect and activity that is found in men this stimulus, if well sustained, is enough to direct our thoughts and energies to a good result. Without this habitual spring of action they would inevitably waste themselves in barren or incoherent efforts, and speedily relapse into their original torpor. Unity in our moral nature is, then, impossible, except so far as affection preponderates over intellect and activity.

The proper function of Intellect is the Service of the Social Sympathies.

True as this fundamental principle is for the individual, it is in public life that its necessity can be demonstrated most irrefutably. The problem is in reality the same, nor is any different solution of it required; only it assumes such increased dimensions, that less uncertainty is felt as to the method to be adopted. The various beings whom it is sought to harmonise have in this case each a separate existence; it is clear, therefore, that the first condition of co-operation must be sought in their own inherent tendency to universal love. No calculations of self-interest can rival this social instinct, whether in promptitude and breadth of intuition, or in boldness and tenacity of purpose. True it is that the benevolent emotions have in most cases less intrinsic energy than the selfish. But they have this beautiful quality, that social life not only permits their growth, but stimulates it to an almost unlimited extent, while it holds their antagonists in constant check. Indeed the increasing tendency in the former to prevail over the latter is the best measure by which to judge of the progress of Humanity. But the intellect may do much to confirm their influence. It may strengthen social feeling by diffusing juster views of the relations in which the various parts of society stand to each other; or it may guide its application by dwelling on the lessons which the past offers to the future. It is to this honourable service that the new philosophy would direct our intellectual powers. Here the highest sanction is given to their operations, and an exhaustless field is opened out for them, from which far deeper satisfaction may be gained than from the approbation of the learned societies, or from the puerile specialities with which they are at present occupied.

In fact, the ambitious claims which, ever since the hopeless decline of the theological synthesis, have been advanced by the intellect, never were or could be realised. Their only value lay in their solvent action on the theological system when it had become hostile to progress. The intellect is intended for service,

not for empire; when it imagines itself supreme, it is really only obeying the personal instead of the social instincts. It never acts independently of feeling, be that feeling good or bad. The first condition of command is force; now reason has but light; the impulse that moves it must come from elsewhere. The metaphysical Utopias, in which a life of pure contemplation is held out as the highest ideal, attractive as they are to modern men of science, are really nothing but illusions of pride, or veils for dishonest schemes. True there is a genuine satisfaction in the act of discovering truth; but it is not sufficiently intense to be an habitual guide of conduct. Indeed, so feeble is our intellect that the impulse of some passion is necessary to direct and sustain it in almost every effort. When the impulse comes from kindly feeling it attracts attention on account of its rarity or value; when it springs from the selfish motives of glory, ambition, or gain, it is too common to be remarked. This is usually the only difference between the two cases. It does indeed occasionally happen that the intellect is actuated by a sort of passion for truth in itself, without any mixture of pride or vanity. Yet, in this case, as in every other, there is intense egotism in exercising the mental powers irrespectively of all social objects. Positivism, as I shall afterwards explain, is even more severe than Catholicism in its condemnation of this type of character, whether in metaphysicians or in men of science. The true philosopher would consider it a most culpable abuse of the facilities which civilisation offers, with a very different purpose, to speculative pursuits.

We have traced the Positive principle from its origin in the occupations of active life, and have seen it extending successively to every department of speculation. We now find it, in its maturity, and that as a simple result of its strict adherence to fact, embracing the sphere of affection, and making that sphere the central point of its synthesis. It is henceforth a fundamental doctrine of Positivism, a doctrine of as great political as philosophical importance, that the Heart preponderates over the Intellect.

Under Theology the intellect was the slave of the heart; under Positivism its servant.

It is true that this doctrine, which is the only basis for establishing harmony in our nature, had been, as I before remarked, instinctively accepted by theological systems. But it was one of the fatalities of society in its preliminary phase, that the doctrine was coupled with an error which, after a time, de-

stroyed all its value. In acknowledging the superiority of the heart the intellect was reduced to abject submission. Its only chance of growth lay in resistance to the established system. This course it followed with increasing effect, till after twenty centuries of insurrection, the system collapsed. The natural result of the process was to stimulate metaphysical and scientific pride, and to promote views subversive of all social order. But Positivism, while systematically adopting the principle here spoken of as the foundation of individual and social discipline, interprets that principle in a different way. It teaches that while it is for the heart to suggest our problems, it is for the intellect to solve them. Now the intellect was at first quite inadequate to this task, for which a long and laborious training was needed. The heart, therefore, had to take its place, and in default of objective truth, to give free play to its subjective inspirations. But for these inspirations, all progress, as I showed in my System of Positive Philosophy, would have been totally impossible. For a long time it was necessary that they should be believed absolutely; but as soon as our reason began to mould its conceptions upon observations, more or less accurate, of the external world, these supernatural dogmas became inevitably an obstacle to its growth. Here lies the chief source of the important modifications which theological belief has successively undergone. No further modifications are now possible without violating its essential principles; and since, meantime, Positive science is assuming every day larger proportions, the conflict between them is advancing with increasing vehemence and danger. The tendency on the one side is becoming more retrograde, on the other more revolutionary; because the impossibility of reconciling the two opposing forces is felt more and more strongly. Never was this position of affairs more manifest than now. The restoration of theology to its original power, supposing such a thing were possible, would have the most degrading influence on the intellect, and, consequently, on the character also; since it would involve the admission that our views of scientific truth were to be strained into accordance with our wishes and our wants. Therefore no important step in the progress of Humanity can now be made without totally abandoning the theological principle. The only service of any real value which it still renders, is that of forcing the attention of Western Europe, by the very fact of its reactionary tendencies,

upon the greatest of all social questions. It is owing to its influence that the central point of the new synthesis is placed in our moral rather than our intellectual nature; and this in spite of every prejudice and habit of thought that has been formed during the revolutionary period of the last five centuries. And while in this, which is the primary condition of social organisation, Positivism proves more efficient than Theology, it at the same time terminates the disunion which has existed so long between the intellect and the heart. For it follows logically from its principles, and also from the whole spirit of the system, that the intellect shall be free to exercise its full share of influence in every department of human life. When it is said that the intellect should be subordinate to the heart, what is meant is, that the intellect should devote itself exclusively to the problems which the heart suggests, the ultimate object being to find proper satisfaction for our various wants. Without this limitation, experience has shown too clearly that it would almost always follow its natural bent for useless or insoluble questions, which are the most plentiful and the easiest to deal with. But when any problem of a legitimate kind has been once proposed, it is the sole judge of the method to be pursued, and of the utility of the results obtained. Its province is to enquire into the present, in order to foresee the future, and to discover the means of improving it. In this province it is not to be interfered with. In a word the intellect is to be the servant of the heart, not its slave. Under these two correlative conditions the elements of our nature will at last be brought into harmony. The equilibrium of these two elements, once established, is in little danger of being disturbed. For since it is equally favourable to both of them, both will be interested in maintaining it. The fact that Reason in modern times has become habituated to revolt, is no ground for supposing that it will always retain its revolutionary character, even when its legitimate claims have been fully satisfied. Supposing the case to arise, however, society, as I shall show afterwards, would not be without the means of repressing any pretensions that were subversive of order. There is another point of view which may assure us that the position given to the heart under the new system will involve no danger to the growth of intellect. Love, when real, ever desires light, in order to attain its ends.

The influence of true feeling is as favourable to sound thought as to wise activity.

The subordination of the intellect to the heart is the *Subjective Principle* of Positivism.

Our doctrine, therefore, is one which renders hypocrisy and oppression alike impossible. And it now stands forward as the result of all the efforts of the past, for the regeneration of order, which, whether considered individually or socially, is so deeply compromised by the anarchy of the present time. It establishes a fundamental principle by which true philosophy and sound polity are brought into correlation; a principle which can be felt as well as proved, and which is at once the key-stone of a system and a basis of government. I shall show, moreover, in the fifth chapter that the doctrine is as rich in esthetic beauty as in philosophical power and in social influence. This will complete the proof of its efficacy as the centre of a universal system, equally valuable from the moral, scientific, or political aspect; and the sole means of bringing this most formidable crisis in the history of Humanity to a real termination. It will be now clear to all that the force of demonstration, a force peculiar to modern times, and which still retains much of its destructive character, becomes matured and elevated by Positivism. It begins to develope constructive tendencies, which will soon be developed more largely. It is not too much, then, to say that Positivism, notwithstanding its speculative origin, offers as much to natures of deep sympathy as to men of highly cultivated intellects, or of energetic character.

Objective basis of the system; External Order of the World, as revealed by Science.

The spirit and the principle of the synthesis which all true philosophers should endeavour to establish, have now been defined. I proceed to explain the method that should be followed in the task, and the peculiar difficulty with which it is attended.

The object of the synthesis will not be secured until it embraces the whole extent of its domain, the moral and practical departments as well as the intellectual. But these three departments cannot be dealt with simultaneously. They follow an order of succession which, so far from dissevering them from the whole to which they belong, is seen when carefully examined to be a natural result of their mutual dependence. The truth is, and it is important to recognise it, that Thoughts must be systematised before Feelings, Feelings before Actions. It is, doubtless, owing to a confused apprehension of this truth that philosophers hitherto, in framing their systems of human nature, have dealt almost exclusively with our intellectual faculties.

The necessity of commencing with the co-ordination of ideas is not merely due to the fact that the relations of these, being more simple and more susceptible of demonstration, form a useful logical preparation for the remainder of the task. On closer examination we find a more important, though less obvious reason. If this first portion of the work be once efficiently performed, it is the foundation of all the rest. In what remains no very serious difficulty will occur, provided always that we content ourselves with that degree of completeness which the ultimate purpose of the system requires.

To give such paramount importance to this portion of the subject may seem at first sight inconsistent with the proposition just laid down, that the strength of the intellectual faculties is far inferior to that of the other elements of our nature. It is quite certain that Feeling and Activity have much more to do with any practical step that we take than pure Reason. In attempting to explain this paradox, we come at last to the peculiar difficulty of this great problem of human Unity.

The first condition of unity is a subjective principle; and this principle in the Positive system is the subordination of the intellect to the heart. Without this the unity that we seek can never be placed on a permanent basis, whether individually or collectively. It is essential to have some influence sufficiently powerful to produce convergence amid the heterogeneous and often antagonistic tendencies of so complex an organism as ours. But this first condition, indispensable as it is, would be quite insufficient for the purpose, without some objective basis, existing independently of ourselves in the external world. That basis consists for us in the laws or Order of the phenomena by which Humanity is regulated. The subjection of human life to this order is incontestable: and as soon as the intellect has enabled us to comprehend it, it becomes possible for the feeling of love to exercise a controlling influence over our discordant tendencies. This, then, is the mission allotted to the intellect in the Positive synthesis; in this sense it is that it should be consecrated to the service of the heart. I have said that our conception of human unity must be totally inadequate, and, indeed, cannot deserve the name, so long as it does not embrace every element of our nature. But it would be equally fatal to the completeness of this great conception to think of human nature irrespectively of what lies outside it. A purely subjective

unity, without any objective basis, would be simply impossible. In the first place any attempt to co-ordinate man's moral nature, without regard to the external world, supposing the attempt feasible, would have very little permanent influence on our happiness, whether collectively or individually; since happiness depends so largely upon our relations to all that exists around us. Besides this we have to consider the exceeding imperfection of our nature. Self-love is deeply implanted in it, and when left to itself is far stronger than Social Sympathy. The social instincts would never gain the mastery were they not sustained and called into constant exercise by the economy of the external world, an influence which at the same time checks the power of the selfish instincts.

By it the selfish affections are controlled; the unselfish strengthened.

To understand this economy aright, we must remember that it embraces not merely the inorganic world, but also the phenomena of our own existence. The phenomena of human life, though more modifiable than any others, are yet equally subject to invariable laws; laws which form the principal objects of Positive speculation. Now the benevolent affections, which themselves act in harmony with the laws of social development, incline us to submit to all other laws, as soon as the intellect has discovered their existence. The possibility of moral unity depends, therefore, even in the case of the individual, but still more in that of society, upon the necessity of recognising our subjection to an external power. By this means our self-regarding instincts are rendered susceptible of discipline. In themselves they are strong enough to neutralise all sympathetic tendencies, were it not for the support that the latter find in this External Order. Its discovery is due to the intellect; which is thus enlisted in the service of feeling, with the ultimate purpose of regulating action.

Thus it is that an intellectual synthesis, or systematic study of the laws of nature, is needed on far higher grounds than those of satisfying our theoretical faculties, which are, for the most part, very feeble, even in men who devote themselves to a life of thought. It is needed, because it solves at once the most difficult problem of the moral synthesis. The higher impulses within us are brought under the influence of a powerful stimulus from without. By its means they are enabled to control our discordant impulses, and to maintain a state of harmony towards which they have always tended, but which, without such aid,

could never be realised. Moreover, this conception of the order of nature evidently supplies the basis for a synthesis of human action; for the efficacy of our actions depends entirely upon their conformity to this order. But this part of the subject has been fully explained in my previous work, and I need not enlarge upon it further. As soon as the synthesis of mental conceptions enables us to form a synthesis of feelings, it is clear that there will be no very serious difficulties in constructing a synthesis of actions. Unity of action depends upon unity of impulse, and unity of design; and thus we find that the co-ordination of human nature, as a whole, depends ultimately upon the co-ordination of mental conceptions, a subject which seemed at first of comparatively slight importance.

The subjective principle of Positivism, that is, the subordination of the intellect to the heart, is thus fortified by an objective basis, the immutable Necessity of the external world; and by this means it becomes possible to bring human life within the influence of social sympathy. The superiority of the new synthesis to the old is even more evident under this second aspect than under the first. In theological systems the objective basis was supplied by spontaneous belief in a supernatural Will. Now, whatever the degree of reality attributed to these fictions, they all proceeded from a subjective source; and therefore their influence in most cases must have been very confused and fluctuating. In respect of moral discipline they cannot be compared either for precision, for force, or for stability, to the conception of an invariable Order, actually existing without us, and attested, whether we will or no, by every act of our existence.

Our conception of this External Order has been gradually growing from the earliest times, and is but just complete.

This fundamental doctrine of Positivism is not to be attributed in the full breadth of its meaning to any single thinker. It is the slow result of a vast process carried out in separate departments, which began with the first use of our intellectual powers, and which is only just completed in those who exhibit those powers in their highest form. During the long period of her infancy Humanity has been preparing this the most precious of her intellectual attainments, as the basis for the only system of life which is permanently adapted to our nature. The doctrine has to be demonstrated in all the more essential cases from observation only, except so far as we admit argument from analogy. Deductive argument is not admissible, except in such cases as are evidently compounded of others in which the proof

given has been sufficient. Thus, for instance, we are authorised by sound logic to assert the existence of laws of weather; though most of these are still, and perhaps, always will be, unknown. For it is clear that meteorological phenomena result from a combination of astronomical, physical, and chemical influences, each of which has been proved to be subject to invariable laws. But in all phenomena which are not thus reducible, we must have recourse to inductive reasoning; for a principle which is the basis of all deduction cannot be itself deduced. Hence it is that the doctrine, being so entirely foreign as it is to our primitive mental state, requires such a long course of preparation. Without such preparation even the greatest thinkers could not anticipate it. It is true that in some cases metaphysical conceptions of a law have been formed before the proof really required had been furnished, But they were never of much service, except so far as they generalised in a more or less confused way the analogies naturally suggested by the laws which had actually been discovered in simpler phenomena. Besides, such assertions always remained very doubtful and very barren in result, until they were based upon some outline of a really Positive theory. Thus, in spite of the apparent potency of this metaphysical method to which modern intellects are so addicted, the conception of an External Order is still extremely imperfect in many of the most cultivated minds, because they have not verified it sufficiently in the most intricate and important class of phenomena, the phenomena of society. I am not, of course, speaking of the few thinkers who accept my discovery of the principal laws of Sociology. Such uncertainty in a subject so closely related to all others, produces great confusion in men's minds, and affects their perception of an invariable order, even in the simplest subjects. A proof of this is the utter delusion into which most geometricians of the present day have fallen with respect to what they call the Calculus of Chances; a conception which presupposes that the phenomena considered are not subject to law. The doctrine, therefore, cannot be considered as firmly established in any one case, until it has been verified specially in every one of the primary categories in which phenomena may be classed. But now that this difficult condition has really been fulfilled by the few thinkers who have risen to the level of their age, we have at last a firm objective basis on which to establish the harmony of our moral nature. That basis is,

that all events whatever, the events of our own personal and social life included, are always subject to natural relations of sequence and similitude, which in all essential respects lie beyond the reach of our interference.

This, then, is the external basis of our synthesis, which includes the moral and practical faculties, as well as the speculative. It rests at every point upon the unchangeable Order of the world. The right understanding of this order is the principal subject of our thoughts; its preponderating influence determines the general course of our feelings; its gradual improvement is the constant object of our actions. To form a more precise notion of its influence, let us imagine that for a moment it were really to cease. The result would be that our intellectual faculties, after wasting themselves in wild extravagances, would sink rapidly into incurable sloth; our nobler feelings would be unable to prevent the ascendancy of the lower instincts; and our active powers would abandon themselves to purposeless agitation. Men have, it is true, been for a long time ignorant of this Order. Nevertheless we have been always subject to it; and its influence has always tended, though without our knowledge, to control our whole being; our actions first, and subsequently our thoughts, and even our affections. As we have advanced in our knowledge of it, our thoughts have become less vague, our desires less capricious, our conduct less arbitrary. And now that we are able to grasp the full meaning of the conception, its influence extends to every part of our conduct. For it teaches us that the object to be aimed at in the economy devised by man, is wise development of the irresistible economy of nature, which cannot be amended till it is first studied and obeyed. In some departments it has the character of fate; that is, it admits of no modification. But even here, in spite of the superficial objections to it which have arisen from intellectual pride, it is necessary for the proper regulation of human life. Suppose, for instance, that man were exempt from the necessity of living on the earth, and were free to pass at will from one planet to another, the very notion of society would be rendered impossible by the licence which each individual would have to give way to whatever unsettling and distracting impulses his nature might incline him. Our propensities are so heterogeneous and so deficient in elevation, that there would be no fixity or consistency in our conduct, but

Even where not modifiable, its influence on the character is of the greatest value.

for these insurmountable conditions. Our feeble reason may fret at such restrictions, but without them all its deliberations would be confused and purposeless. We are powerless to create: all that we can do in bettering our condition is to modify an order in which we can produce no radical change. Supposing us in possession of that absolute independence to which metaphysical pride aspires, it is certain that so far from improving our condition, it would be a bar to all development, whether social or individual. The true path of human progress lies in the opposite direction; in diminishing the vacillation, inconsistency, and discordance of our designs by furnishing external motives for those operations of our intellectual, moral, and practical powers, of which the original source was purely internal. The ties by which our various diverging tendencies are held together would be quite inadequate for their purpose, without a basis of support in the external world, which is unaffected by the spontaneous variations of our nature.

But, however great the value of Positive doctrine in pointing out the unchangeable aspects of the universal Order, what we have principally to consider are the numerous departments in which that order admits of artificial modifications. Here lies the most important sphere of human activity. The only phenomena, indeed, which we are wholly unable to modify are the simplest of all, the phenomena of the Solar System which we inhabit. It is true that now that we know its laws we can easily conceive them improved in certain respects; but to whatever degree our power over nature may extend, we shall never be able to produce the slightest change in them. What we have to do is so to dispose our life as to submit to these resistless fatalities in the best way we can; and this is comparatively easy, because their greater simplicity enables us to foresee them with more precision and in a more distant future. Their interpretation by Positive science has had a most important influence on the gradual education of the human intellect; and it will always continue to be the source from which we obtain the clearest and most impressive sense of Immutability. Too exclusively studied they might even now lead to fatalism; but controlled as their influence will be henceforward by a more philosophic education, they may well become a means of moral improvement by disposing us to submit with resignation to all evils which are absolutely insurmountable.

In other parts of the external economy, invariability in all primary aspects is found compatible with modifications in points of secondary importance. These modifications become more numerous and extensive as the phenomena are more complex. The reason of this is, that the influences to a combination of which the results are due, being more varied and more accessible, offer greater facilities to our feeble powers to interfere with advantage. But all this has been fully explained in my 'System of Positive Philosophy.' The tendency of that work was to show that our intervention became more efficacious in proportion as the phenomena upon which we acted had a closer relation to the life of man or society. Indeed the extensive modifications of which society admits, go far to keep up the common mistake that social phenomena are not subject to any constant law.

But in most cases we can modify it; and in these the knowledge of it forms the systematic basis of human nature.

At the same time we have to remember that this increased possibility of human intervention in certain parts of the External Order necessarily coexists with increased imperfection, for which it is a valuable but very inadequate compensation. Both features alike result from the increase of complexity. Even the laws of the Solar System are very far from perfect, notwithstanding their greater simplicity, which indeed makes their defects more perceptible. The existence of these defects should be taken into careful consideration; not indeed with the hope of amending them, but as a check upon unreasoning admiration. Besides, they lead us to a clearer conception of the true position of Humanity, a position of which the most striking feature is the necessity of struggling against difficulties of every kind. Lastly, by observing these defects we are less likely to waste our time in seeking for absolute perfection, and so neglecting the wiser course of looking for such improvements as are really possible.

In all other phenomena, the increasing imperfection of the economy of nature becomes a powerful stimulus to all our faculties, whether moral, intellectual, or practical. Here we find sufferings which can really be alleviated to a large extent by wise and well-sustained combination of efforts. This consideration should give a firmness and dignity of bearing, to which Humanity could never attain during her period of infancy. Those who look wisely into the future of society will feel that the conception of man becoming, without fear, or boast, the

arbiter, within certain limits, of his own destiny, has in it something far more satisfying than the old belief in Providence, which implied our remaining passive. Social union will be strengthened by the conception, because everyone will see that union forms our principal resource against the miseries of human life. And while it calls out our noblest sympathies, it impresses us more strongly with the importance of high intellectual culture, being itself the object for which such culture is required. These important results have been ever on the increase in modern times; yet hitherto they have been too limited and casual to be appreciated rightly, except so far as we could anticipate the future of society by the light of sound historical principles. Human art, viewed as a system of procedure, does not include that part of the economy of nature which, being the most modifiable, the most imperfect, and the most important of all, ought on every ground to be regarded as the principal object of human exertions. Even medical art, specially so called, is only just beginning to free itself from its primitive routine. And social art, whether moral or political, is plunged in routine so deeply that few statesmen admit the possibility of shaking it off. Yet of all the arts, it is the one which best admits of being reduced to a system; and until this is done it will be impossible to place on a rational basis all the rest of our practical life. All these narrow views are due simply to insufficient recognition of the fact that the highest phenomena are as much subject to laws as others. When the conception of the Order of Nature has become generally accepted in its full extent, the ordinary definition of Art will become as comprehensive and as homogeneous as that of Science; and it will then become obvious to all sound thinkers that the principal sphere of both Art and Science is the social life of man.

Thus, the social services of the Intellect are not limited to revealing the existence of an external Economy, and the necessity of submission to its sway. If the theory is to have any influence upon our active powers, it should include an exact estimate of the imperfections of this economy and of the limits within which it varies, so as to indicate and define the boundaries of human intervention. Thus it will always be an important function of philosophy to criticise nature in a Positive spirit, although the antipathy to theology by which such criticism was formerly animated has ceased to have much

interest, from the very fact of having done its work so effectually. The object of Positive criticism is not controversial. It aims simply at putting the great question of human life in a clearer light. It bears closely on what Positivism teaches to be the great end of life, namely, the struggle to become more perfect; which implies previous imperfection. This truth is strikingly apparent when applied to the case of our own nature, for true morality requires a deep and habitual consciousness of our natural defects.

The chief difficulty of the Positive Synthesis was to complete our conception of the External Order, by extending it to Social phenomena.

I have now described the fundamental condition of the Positive Synthesis. Deriving its subjective principle from the affections, it is dependent ultimately on the intellect for its objective basis. This basis connects it with the Economy of the external world, the dominion of which Humanity accepts, and at the same time modifies. I have left many points unexplained; but enough has been said for the purpose of this review, which is only the introduction to a more complete treatment. We are thus led to the essential difficulty that presented itself in the construction of the Synthesis. That difficulty was to discover the true theory of human and social development. The first decisive step in this discovery renders the conception of the Order of Nature complete. It stands out then as the fundamental doctrine of an universal system, for which the whole course of modern progress has been preparing the way. For three centuries men of science have been unconsciously co-operating in the work. They have left no gap of any importance, except in the region of Moral and Social phenomena. And now that man's history has been for the first time systematically considered as a whole, and has been found to be, like all other phenomena, subject to invariable laws, the preparatory labours of modern Science are ended. Her remaining task is to construct that synthesis which will place her at the only point of view from which every department of knowledge can be embraced.

In my System of Positive Philosophy both these objects were aimed at. I attempted, and in the opinion of the principal thinkers of our time successfully, to complete and at the same time to co-ordinate Natural Philosophy, by establishing the general law of human development, social as well as intellectual. I shall not now enter into the discussion of this law, since its truth is no longer contested. Fuller consideration of it is reserved

for the third volume of the present treatise. It lays down, as is generally known, that our speculations upon all subjects whatsoever, pass necessarily through three successive stages: the Theological stage, in which free play is given to spontaneous fictions admitting of no proof; the Metaphysical stage, characterised by the prevalence of personified abstractions or entities; lastly, the Positive stage, based upon an exact view of the real facts of the case. The first, though purely provisional, is invariably the point from which we start; the third is the only permanent or normal state; the second has but a modifying or rather a solvent influence, which qualifies it for regulating the transition from the first stage to the third. We begin with theological Imagination, thence we pass through metaphysical Discussion, and we end at last with Positive Demonstration. Thus by means of this one general law we are enabled to take a comprehensive and simultaneous view of the past, present, and future of Humanity.

In my System of Positive Philosophy, this law of Filiation has always been associated with the law of Classification, the application of which to Social Dynamics furnishes the second element requisite for the theory of development. It fixes the order in which our different conceptions pass through each of these phases. That order, as is generally known, is determined by the decreasing generality, or what comes to the same thing, by the increasing complexity of the phenomena; the more complex being naturally dependent upon those that are more simple and less special. Arranging the sciences according to this mutual relation, we find them grouped naturally in six primary divisions: Mathematics, Astronomy, Physics, Chemistry, Biology, and Sociology. Each passes through the three phases of development before the one succeeding it. Without continuous reference to this classification the theory of development would be confused and vague.

The theory thus derived from the combination of this second or statical law with the dynamical law of the three stages, seems at first sight to include nothing but the intellectual movement. But my previous remarks will have shown that this is enough to guarantee its applicability to social progress also; since social progress has invariably depended on the growth of our fundamental beliefs with regard to the economy that surrounds us. The historical portion of my 'Positive

Philosophy' has proved an unbroken connection between the development of Activity and that of Speculation; on the combined influence of these depends the development of Affection. The theory therefore requires no alteration: what is wanted is merely an additional statement explaining the phases of active, that is to say, of political development. Human activity, as I have long since shown, passes successively through the stages of Offensive warfare, Defensive warfare, and Industry. The respective connection of these states with the preponderance of the theological, the metaphysical, or the positive spirit leads at once to a complete explanation of history. It reproduces in a systematic form the only historical conception which has become adopted by universal consent; the division namely, of history into Ancient, Mediæval, and Modern.

Thus the foundation of social science depends simply upon establishing the truth of this theory of development. We do this by combining the dynamic law, which is its distinctive feature, with the statical principle which renders it coherent; we then complete the theory by extending it to practical life. All knowledge is now brought within the sphere of Natural Philosophy; and the provisional distinction by which, since Aristotle and Plato, it has been so sharply demarcated from Moral Philosophy, ceases to exist. The Positive spirit, so long confined to the simpler inorganic phenomena, has now passed through its difficult course of probation. It extends to a more important and more intricate class of speculations, and disengages them for ever from all theological or metaphysical influence. All our notions of truth are thus rendered homogeneous, and begin at once to converge towards a central principle. A firm objective basis is consequently laid down for that complete co-ordination of human existence towards which all sound Philosophy has ever tended, but which the want of adequate materials has hitherto made impossible.

It will be felt, I think, that the principal difficulty of the Positive Synthesis was met by my discovery of the laws of development, if we bear in mind that while that theory completes and co-ordinates the objective basis of the system, it at the same time holds it in subordination to the subjective principle. It is under the influence of this moral principle that the whole philosophical construction should be carried on. The enquiry into the Order of the Universe is an indispensable

By the discovery of Sociological laws social questions are made paramount; and thus our *subjective principle* is satisfied without danger to free thought.

task, and it comes necessarily within the province of the intellect; but the intellect is too apt to aim in its pride at something beyond its proper function, which consists in unremitting service of the social sympathies. It would willingly escape from all control and follow its own bent towards speculative digressions; a tendency which is at present favoured by the undisciplined habits of thought naturally due to the first rise of Positivism in its special departments. The influence of the moral principle is necessary to recall it to its true function; since if its investigations were allowed to assume an absolute character, and to recognise no limit, we should only be repeating in a scientific form many of the worst results of theological and metaphysical belief. The Universe is to be studied not for its own sake, but for the sake of Man or rather of Humanity. To study it in any other spirit would not only be immoral, but also highly irrational. For, as statements of pure objective truth, our scientific theories can never be really satisfactory. They can only satisfy us from the subjective point of view; that is, by limiting themselves to the treatment of such questions as have some direct or indirect influence over human life. It is for social feeling to determine these limits; outside which our knowledge will always remain imperfect as well as useless, and this even in the case of the simplest phenomena; as astronomy testifies. Were the influence of social feeling to be slackened, the Positive spirit would soon fall back to the subjects which were preferred during the period of its infancy; subjects the most remote from human interest, and therefore also the easiest. While its probationary period lasted, it was natural to investigate all accessible problems without distinction; and this was often justified by the logical value of many problems that, scientifically speaking, were useless. But now that the Positive method has been sufficiently developed to be applied exclusively to the purpose for which it was intended, there is no use whatever in prolonging the period of probation by these idle exercises. Indeed the want of purpose and discipline in our researches is rapidly assuming a retrograde character. Its tendency is to undo the chief results obtained by the spirit of detail during the time when that spirit was really essential to progress.

Here, then, we are met by a serious difficulty. The construction of the objective basis for the Positive synthesis

imposes two conditions which seem, at first sight, incompatible. On the one hand we must allow the intellect to be free, or else we shall not have the full benefit of its services; and, on the other, we must control its natural tendency to unlimited digressions. The problem was insoluble, so long as the study of the natural economy did not include Sociology. But so soon as the Positive spirit extends to the treatment of social questions, these at once take precedence of all others, and thus the moral point of view becomes paramount. Objective science, proceeding from without inwards, falls at last into natural harmony with the subjective or moral principle, the superiority of which it had for so long a time resisted. As a mere speculative question it may be considered as proved to the satisfaction of every true thinker, that the social point of view is logically and scientifically supreme over all others, being the only point from which all our scientific conceptions can be regarded as a whole. Yet its influence can never be injurious to the progress of other Positive studies; for these, whether for the sake of their method or of their subject-matter, will always continue to be necessary as an introduction to the final science. Indeed the Positive system gives the highest sanction and the most powerful stimulus to all preliminary sciences, by insisting on the relation which each of them bears to the great whole, Humanity.

Thus the foundation of social science bears out the statement made at the beginning of this work, that the intellect would, under Positivism, accept its proper position of subordination to the heart. The recognition of this, which is the subjective principle of Positivism, renders the construction of a complete system of a human life possible. The antagonism which, since the close of the Middle Ages, has arisen between Reason and Feeling, was an anomalous though inevitable condition. It is now for ever at an end; and the only system which can really satisfy the wants of our nature, individually or collectively, is therefore ready for our acceptance. As long as the antagonism existed, it was hopeless to expect that Social Sympathy could do much to modify the preponderance of self-love in the affairs of life. But the case is different as soon as reason and sympathy are brought into active co-operation. Separately, their influence in our imperfect organisation is very feeble; but combined it may extend indefinitely. It will never, indeed, be able to do away with the fact that practical

life must, to a large extent, be regulated by interested motives: yet it may introduce a standard of morality inconceivably higher than any that has existed in the past, before these two modifying forces could be made to combine their action upon our stronger and lower instincts.

Distinction between Abstract and Concrete laws. It is the former only that we require for the purpose before us.

In order to give a more precise conception of the intellectual basis on which the system of Positive Polity should rest, I must explain the general principle by which it should be limited. It should be confined to what is really indispensable to the construction of that Polity. Otherwise the intellect will be carried away, as it has been before, by its tendency to useless digressions. It will endeavour to extend the limits of its province; thereby escaping from the discipline imposed by social motives, and putting off all attempts at moral and social regeneration for a longer time than the construction of the philosophic basis for action really demands. Here we shall find a fresh proof of the importance of my theory of development. By that discovery the intellectual synthesis may be considered as having already reached the point from which the synthesis of affections may be at once begun; and even the synthesis of actions, at least in its highest and most difficult part, morality properly so called.

With the view of restricting the construction of the objective basis within reasonable limits, there is this distinction to be borne in mind. In the Order of Nature, there are two classes of laws; those that are simple or Abstract, those that are compound or Concrete. In my work on 'Positive Philosophy,' the distinction has been thoroughly established, and frequent use has been made of it. It will be sufficient here to point out its origin and the method of applying it.

Positive science may deal either with objects themselves as they exist, or with the separate phenomena that the objects exhibit. Of course we can only judge of an object by the sum of its phenomena; but it is open to us either to examine a special class of phenomena abstracted from all the beings that exhibit it, or to take some special object, and examine the whole concrete group of phenomena. In the latter case we shall be studying different systems of existence; in the former, different modes of activity. As good an example of the distinction as can be given is that, already mentioned, of Meteorology. The facts of weather are evidently combinations of astronomical, physical,

chemical, biological, and even social phenomena; each of these classes requiring its own separate theories. Were these abstract laws sufficiently well known to us, then the whole difficulty of the concrete problem would be so to combine them, as to deduce the order in which each composite effect would follow. This, however, is a process which seems to me so far beyond our feeble powers of deduction, that, even supposing our knowledge of the abstract laws perfect, we should still be obliged to have recourse to the inductive method.

Now the investigation of the economy of nature here contemplated is evidently of the abstract kind. We decompose that economy into its primary phenomena, that is to say, into those which are not reducible to others. These we range in classes; each of which, notwithstanding the connection that exists between all, requires a separate inductive process; for the existence of laws cannot be proved in any one of them by pure deduction. It is only with these simpler and more abstract relations that our synthesis is directly concerned: when these are established, they afford a rational groundwork for the more composite and concrete researches. The great complexity of concrete relations makes it improbable that we shall ever be able to co-ordinate them perfectly. In that case the synthesis would always remain limited to abstract laws. But its true object, that of supplying an objective basis for the great synthesis of human life, will none the less be attained. For this groundwork of abstract knowledge would introduce harmony between all our mental conceptions, and thereby would make it possible to systematise feelings and actions, which is the object of all sound philosophy. The abstract study of nature is therefore all that is absolutely indispensable for the establishment of unity in human life. It serves as the foundation of all wise action: as the *philosophia prima*, the necessity of which in the normal state of humanity was dimly foreseen by Bacon. When the abstract laws exhibiting the various modes of activity have been brought systematically before us, our practical knowledge of each special system of existence ceases to be purely empirical, though the greater number of concrete laws may still be unknown. We find the best example of this truth in the most difficult and important subject of all, Sociology. Knowledge of the principal statical and dynamical laws of social existence is evidently sufficient for the purpose of systematising the various

aspects of private or public life, and thereby of rendering our condition far more perfect. Should this knowledge be acquired, of which there is now no doubt, we need not regret being unable to give a satisfactory explanation of every state of society that we find existing throughout the world in all ages. The discipline of social feeling will check any foolish indulgence of the spirit of curiosity, and prevent the understanding from wasting its powers in useless speculations; for feeble as these powers are, it is from them that Humanity derives her most efficient means of contending against the defects of the External Order. The discovery of the principal concrete laws would no doubt be attended by the most beneficial results, moral as well as physical; and this is the field in which the science of the future will reap its richest harvest. But such knowledge is not indispensable for our present purpose, which is to form a complete synthesis of life, effecting for the final state of humanity what the theological synthesis effected for its primitive state. For this purpose Abstract philosophy is undoubtedly sufficient; so that even supposing that Concrete philosophy should never become so perfect as we desire, social regeneration will still be possible.

In my Theory of Development, the required Synthesis of Abstract conceptions already exists.

Regarded under this more simple aspect, our system of scientific knowledge is already so far elaborated, that all thinkers whose nature is sufficiently sympathetic may proceed without delay to the problem of moral regeneration; a problem which must prepare the way for that of political reorganisation. For we shall find that the theory of development of which we have been speaking, when looked at from another point of view, condenses and systematises all our abstract conceptions of the order of nature.

This will be understood by regarding all departments of our knowledge as being really component parts of one and the same science; the science of Humanity. All other sciences are but the prelude or the development of this. Before we can enter upon it directly, there are two subjects which it is necessary to investigate; our external circumstances, and the organisation of our own nature. Social life cannot be understood without first understanding the medium in which it is developed, and the beings who manifest it. We shall make no progress, therefore, in the final science until we have sufficient abstract knowledge of the outer world and of individual life to define the

influence of these laws on the special laws of social phenomena. And this is necessary from the logical as well as from the scientific point of view. The feeble faculties of our intellect require to be trained for the more difficult speculations by practice in the easier. For the same reasons, the study of the inorganic world should take precedence of the organic. For, in the first place, the laws of the more universal mode of existence have a preponderating influence over those of the more special modes; and in the second place it is clearly incumbent on us to begin the study of the Positive method with its simplest and most characteristic applications. I need not dwell further upon principles so fully established in my former work.

Social Philosophy, therefore, ought on every ground to be preceded by Natural Philosophy in the ordinary sense of the word; that is to say by the study of inorganic and organic nature. It is reserved for our own century to take in the whole scope of science; but the commencement of these preparatory studies dates from the first astronomical discoveries of antiquity. Natural Philosophy was completed by the modern science of Biology, of which the ancients possessed nothing but a few statical principles. But though the dependence of biological conditions upon astronomical is unquestionable, yet these two sciences differ too much from each other, and are too indirectly connected to give us an adequate conception of Natural Philosophy as a whole. It would be pushing the principle of condensation too far to reduce it to these two terms. One connecting link was supplied by the science of Chemistry which arose in the middle ages. The natural succession of Astronomy, Chemistry, and Biology leading gradually up to the final science, Sociology, afforded a glimpse of the true intellectual synthesis. But the interposition of Chemistry was not enough: because, though its relation to Biology was intimate, it was too remote from Astronomy. For want of understanding the mode in which astronomical conditions really affected us, the arbitrary and chimerical fancies of astrology were employed, though of course quite valueless except for this temporary purpose. In the seventeenth century, however, the science of Physics, specially so called, was founded; and a satisfactory arrangement of scientific conceptions began to be formed. Physics included a series of inorganic researches, the more general branch of which bordered on Astronomy, the more special on Chemistry.

To complete our view of the scientific hierarchy we have now only to go back to its origin, Mathematics; a class of speculations so simple and so general, that they passed at once and without effort into the Positive stage. Without Mathematics, Astronomy was impossible: and they will always continue to be the starting point of Positive education for the individual as they have been for the race. Even under the most absolute theological influence they stimulate the Positive spirit to a certain degree of systematic growth. From them it extends step by step to the subjects from which at first it had been most rigidly excluded.

We see from these brief remarks that the series of the abstract sciences naturally arranges itself according to the decrease in generality and the increase in complication. We see the reason for the introduction of each member of the series, and the mutual connection between them. The classification is evidently the same as that before laid down in my theory of development. That theory therefore may be regarded, from the statical point of view, as furnishing a direct basis for the co-ordination of Abstract conceptions, on which, as we have seen, the whole synthesis of human life depends. Such co-ordination at once establishes unity in our intellectual operations. It realises the desire obscurely expressed by Bacon for a *scala intellectûs*, by the aid of which our thoughts may pass with ease from the lowest subjects to the highest, or *vice versâ*, without weakening the sense of their continuous connection in nature. Each of the six terms of which our series is composed is in its central portion quite distinct from the two adjoining links; but it is closely related in its commencement to the preceding term, in its conclusion to the term which follows. A further proof of the homogeneousness and continuity of the system is that the same principle of classification, when applied more closely, enables us to arrange the various theories of which each science consists. For example, the three great orders of mathematical speculations, Arithmetic, Geometry, and Mechanics, follow the same law of classification as that by which the entire scale is regulated. And I have shown in my 'Positive Philosophy' that the same holds good of the other sciences. As a whole, therefore, the series is the most concise summary that can be formed of the vast range of Abstract truth; and conversely, all rational researches of a special kind result in some

partial development of this series. Each term in it requires its own special processes of induction; yet in each we reason deductively from the preceding term, a method which will always be as necessary for purposes of instruction, as it was originally for the purpose of discovery. Thus it is that all our other studies are but a preparation for the final science of Humanity. By it their mode of culture will always be influenced, and will gradually be imbued with the true spirit of generality, which is so closely connected with social sympathy. Nor is there any danger of such influence becoming oppressive, since the very principle of our system is to combine a due measure of independence with practical convergence. The fact that our theory of classification, by the very terms of its composition, subordinates intellectual to social considerations, is eminently calculated to secure its popular acceptance. It brings the whole speculative system under the criticism, and at the same time under the protection of the public, which is usually not slow to check any abuse of those habits of abstraction which are necessary to the philosophic function.

The same theory then which explains the mental evolution of Humanity, lays down the true method by which our abstract conceptions should be classified; thus reconciling the conditions of Order and Movement, hitherto more or less at variance. Its historical clearness and its philosophical force strengthen each other, for we cannot understand the connection of our conceptions except by studying the succession of the phases through which they pass. And on the other hand, but for the existence of such a connection, it would be impossible to explain the historical phases. So we see that for all sound thinkers, History and Philosophy are inseparable.

Therefore we are in a position to proceed at once with the work of social regeneration.

A theory which embraces the statical as well as the dynamical aspects of the subject, and which fulfils the conditions here spoken of, may certainly be regarded as establishing the true objective basis on which unity can be established in our intellectual functions. And this unity will be developed and consolidated as our knowledge of its basis becomes more satisfactory. But the social application of the system will have far more influence on the result than any overstrained attempts at exact scientific accuracy. The object of our philosophy is to direct the spiritual reorganisation of the civilised world. It is with a view to this object that all attempts at fresh discovery

or at improved arrangement should be conducted. Moral and political requirements will lead us to investigate new relations; but the search should not be carried farther than is necessary for their application. Sufficient for our purpose, if this incipient classification of our mental products be so far worked out that the synthesis of Affection and of Action may be at once attempted; that is, that we may begin at once to construct that system of morality under which the final regeneration of Humanity will proceed. Those who have read my Positive Philosophy will, I think, be convinced that the time for this attempt has arrived. How urgently it is needed will appear in every part of the present work.

Error of identifying Positivism with Atheism, Materialism, Fatalism, or Optimism. Atheism, like Theology, discusses insoluble mysteries.

I have now described the general spirit of Positivism. But there are two or three points on which some further explanation is necessary, as they are the source of misapprehensions too common and too serious to be disregarded. Of course I only concern myself with such objections as are made in good faith.

The fact of entire freedom from theological belief being necessary before the Positive state can be perfectly attained, has induced superficial observers to confound Positivism with a state of pure negation. Now this state was at one time, and that even so recently as the last century, favourable to progress; but at present in those who unfortunately still remain in it, it is a radical obstacle to all sound social and even intellectual organisation. I have long ago repudiated all philosophical or historical connection between Positivism and what is called Atheism. But it is desirable to expose the error somewhat more clearly.

Atheism, even from the intellectual point of view, is a very imperfect form of emancipation; for its tendency is to prolong the metaphysical stage indefinitely, by continuing to seek for new solutions of Theological problems, instead of setting aside all inaccessible researches on the ground of their utter inutility. The true Positive spirit consists in substituting the study of the invariable Laws of phenomena, for that of their so-called Causes, whether proximate or primary; in a word, in studying the How instead of the Why. Now, this is wholly incompatible with the ambitious and visionary attempts of Atheism to explain the formation of the Universe, the origin of animal life, &c. The Positivist comparing the various phases of human speculation, looks upon these scientific

chimeras as far less valuable even from the intellectual point of view than the first spontaneous inspirations of primeval times. The principle of Theology is to explain everything by supernatural Wills. That principle can never be set aside until we acknowledge the search for Causes to be beyond our reach, and limit ourselves to the knowledge of Laws. As long as men persist in attempting to answer the insoluble questions which occupied the attention of the childhood of our race, by far the more rational plan is, to do as was done then, that is, simply to give free play to the imagination. These spontaneous beliefs have gradually fallen into disuse, not because they have been disproved, but because mankind has become more enlightened as to its wants and the scope of its powers, and has gradually given an entirely new direction to its speculative efforts. If we insist upon penetrating the unattainable mystery of the essential Cause that produces phenomena, there is no hypothesis more satisfactory than that they proceed from Wills dwelling in them or outside them; an hypothesis which assimilates them to the effect produced by the desires which exist within ourselves. Were it not for the pride induced by metaphysical and scientific studies, it would be inconceivable that any Atheist, modern or ancient, should have believed that his vague hypotheses on such a subject were preferable to this direct mode of explanation. And it was the only mode which really satisfied the reason, until men began to see the utter inanity and inutility of all search for absolute truth. The Order of Nature is doubtless very imperfect in every respect; but its production would be far more compatible with the hypothesis of an intelligent Will than with that of a blind mechanism. Persistent Atheists, therefore, would seem to be the most illogical of theologists; because they occupy themselves with theological problems, and yet reject the only appropriate method of handling them. But the fact is, that pure Atheism even in the present day is very rare. What is called Atheism is usually a phase of Pantheism, which is really nothing but a relapse disguised under learned terms into a vague and abstract form of Fetichism. And it is not impossible that it may lead to the reproduction in one form or other of every theological phase, as soon as the check which modern society still imposes on metaphysical extravagance, has become somewhat weakened. The adoption of such theories as a satisfactory system of

belief, indicates a very exaggerated or rather false view of intellectual requirements, and a very insufficient recognition of moral and social wants. It is generally connected with the visionary but mischievous tendencies of ambitious thinkers to uphold what they call the empire of Reason. In the moral sphere, it forms a sort of basis for the degrading fallacies of modern metaphysicians as to the absolute preponderance of self-interest. Politically, its tendency is to unlimited prolongation of the revolutionary position: its spirit is that of blind hatred to the past; and it resists all attempts to explain it on Positive principles, with the view of disclosing the future. Atheism, therefore, is not likely to lead to Positivism except in those who pass through it rapidly as the last and most short-lived of metaphysical phases. And the wide diffusion of the scientific spirit in the present day makes this passage so easy that to arrive at maturity without accomplishing it, is a symptom of a certain mental weakness, which is often connected with moral insufficiency, and is very incompatible with Positivism. Negation offers but a feeble and precarious basis for union: and disbelief in Monotheism is of itself no better proof of a mind fit to grapple with the questions of the day than disbelief in Polytheism or Fetichism, which no one would maintain to be an adequate ground for claiming intellectual sympathy. The Atheistic phase indeed was not really necessary, except for the revolutionists of the last century who took the lead in the movement towards radical regeneration of society. The necessity has already ceased; for the decayed condition of the old system makes the need of regeneration palpable to all. Persistency in anarchy, and Atheism is the most characteristic symptom of anarchy, is a temper of mind more unfavourable to the organic spirit, which ought by this time to have established its influence, than sincere adhesion to the old forms. This latter is of course obstructive: but at least it does not hinder us from fixing our attention upon the great social problem. Indeed it helps us to do so; because it forces the new philosophy to throw aside every weapon of attack against the older faith except its own higher capacity of satisfying our moral and social wants. But from the Atheism maintained by many metaphysicians and scientific men of the present day, Positivism, instead of wholesome rivalry of this kind, will meet with nothing but barren resistance. Anti-theological as such men

may be, they feel unmixed repugnance for any attempts at social regeneration, although their efforts in the last century had to some extent prepared the way for it. Far then, from counting upon their support, Positivists must expect to find them hostile: although from the incoherence of their opinions it will not be difficult to reclaim those of them whose errors are not essentially due to pride.

Materialism is due to the encroachment of the lower sciences on the domain of the higher: an error which Positivism rectifies.

The charge of Materialism which is often made against Positive philosophy is of more importance. It originates in the course of scientific study upon which the Positive System is based. In answering the charge, I need not enter into any discussion of impenetrable mysteries. Our theory of development will enable us to see distinctly the real ground of the confusion that exists upon the subject.

Positive science was for a long time limited to the simplest subjects; it could not reach the highest except by a natural series of intermediate steps. As each of these steps is taken, the student is apt to be influenced too strongly by the methods and results of the preceding stage. Here, as it seems to me, lies the real source of that scientific error which men have instinctively blamed as Materialism. The name is just, because the tendency indicated is one which degrades the higher subjects of thought by confounding them with the lower. It was hardly possible that this usurpation by one science of the domain of another should have been wholly avoided. For since the more special phenomena do really depend upon the more general, it is perfectly legitimate for each science to exercise a certain deductive influence upon that which follows it in the scale. By such influence the special inductions of that science were rendered more coherent. The result, however, is that each of the sciences has to undergo a long struggle against the encroachments of the one preceding it; a struggle which even in the case of the subjects which have been studied longest, is not yet over. Nor can it entirely cease until the controlling influence of sound philosophy be established over the whole scale, introducing juster views of the relations of its several parts, about which at present there is such irrational confusion. Thus it appears that Materialism is a danger inherent in the mode in which the scientific studies necessary as a preparation for Positivism were pursued. Each science tended to absorb the one next to it, on the ground of having reached the Positive

stage earlier and more thoroughly. The evil then is really deeper and more extensive than is imagined by most of those who deplore it. It passes generally unnoticed except in the highest class of subjects. These doubtless are more seriously affected, inasmuch as they undergo the encroaching process from all the rest; but we find the same thing in different degrees, in every step of the scientific scale. Even the lowest step, Mathematics, is no exception, though its position would seem at first sight to exempt it. To a philosophic eye there is Materialism in the common tendency of mathematicians at the present day to absorb Geometry or Mechanics into the Calculus, as well as in the more evident encroachments of Mathematics upon Physics, of Physics upon Chemistry, of Chemistry, which is more frequent, upon Biology, or lastly in the common tendency of the best biologists to look upon Sociology as a mere corollary of their own science. In all these cases it is the same fundamental error; that is, an exaggerated use of deductive reasoning; and in all it is attended with the same result; that the higher studies are in constant danger of being disorganised by the indiscriminate application of the lower. All scientific specialists at the present time are more or less materialists, according as the phenomena they study are more or less simple and general. Geometricians, therefore, are more liable to the error than any others; they all aim consciously or otherwise at a synthesis in which the most elementary studies, those of Number, Space, and Motion, are made to regulate all the rest. But the biologists who resist this encroachment most energetically, are often guilty of the same mistake. They not unfrequently attempt, for instance, to explain all sociological facts by the influence of climate and race, which are purely secondary; thus showing their ignorance of the fundamental laws of Sociology, which can only be discovered by a series of direct inductions from history.

This philosophical estimate of Materialism explains how it is that it has been brought as a charge against Positivism, and at the same time proves the deep injustice of the charge. Positivism, far from countenancing so dangerous an error, is, as we have seen, the only philosophy which can completely remove it. The error arises from certain tendencies which are in themselves legitimate, but which have been carried too far; and Positivism satisfies these tendencies in their due measure.

Hitherto the evil has remained unchecked, except by the theologico-metaphysical spirit, which, by giving rise to what is called Spiritualism, has rendered a very valuable service. But useful as it has been, it could not arrest the active growth of Materialism, which has assumed in the eyes of modern thinkers something of a progressive character, from having been so long connected with the cause of resistance to a retrograde system. Notwithstanding all the protests of the spiritualists, the lower sciences have encroached upon the higher to an extent that seriously impairs their independence and their value. But Positivism meets the difficulty far more effectually. It satisfies and reconciles all that is really tenable in the rival claims of both Materialism and Spiritualism; and, having done this, it discards them both. It holds the one to be as dangerous to Order as the other to Progress. This result is an immediate consequence of the establishment of the encyclopædic scale, in which each science retains its own proper sphere of induction, while deductively it remains subordinate to the science which precedes it. But what really decides the matter is the paramount importance, both logically and scientifically, given by Positive Philosophy to social questions. For these being the questions in which the influence of Materialism is most mischievous, and also in which it is most easily introduced, a system which gives them the precedence over all others necessarily considers Materialism as obstructive as Spiritualism, both alike retarding the growth of that science for the sake of which all other sciences are studied. Further advance in the work of social regeneration implies the elimination of both of them, because it cannot proceed without exact knowledge of the laws of moral and social phenomena. In the next chapter I shall have to speak of the mischievous effects of Materialism upon the Art or practice of social life. It leads to a misconception of the most fundamental principle of that Art, namely, the systematic separation of spiritual and temporal power. To maintain that separation, to carry out on a more satisfactory basis the admirable attempt made in the Middle Ages by the Catholic Church, is the most important of political questions. Thus the antagonism of Positivism to Materialism rests upon political no less than upon philosophical grounds.

With the view of securing a dispassionate consideration of this subject, and of avoiding all confusion, I have laid no stress

upon the charge of immorality that is so often brought against Materialism. This reproach, even when made sincerely, is constantly belied by experience. Indeed it is inconsistent with all that we know of human nature. Our opinions, whether right or wrong, have not, fortunately, the absolute power over our feelings and conduct which is commonly attributed to them. Materialism has been provisionally connected with the whole movement of emancipation, and it has therefore often been found in common with the noblest aspirations. That connection, however, has now ceased; and it must be owned that even in the most favourable cases this error, purely intellectual though it be, has to a certain extent always checked the free play of our nobler instincts, by leading men to ignore or misconceive moral phenomena, which were left unexplained by its crude hypothesis. Cabanis, a philosopher whose moral nature was as pure and sympathetic as his intellect was elevated and enlarged, gave a striking example of this tendency in his unfortunate attack upon mediæval chivalry. The Materialism of his day had entirely blinded him to the beneficial results of the attempts made by the most energetic of our ancestors to institute the Worship of Woman.

We have now examined the two principal charges brought against the Positive system, and we have found that they apply merely to the unsystematic state in which Positive principles are first introduced. But the system is also accused of Fatalism and of Optimism; charges on which it will not be necessary to dwell at great length, because, though frequently made, they are much easier to refute.

Nor is Positivism fatalist, since it asserts the External Order to be modifiable.

The charge of Fatalism has accompanied every fresh extension of Positive science, from its first beginnings. Nor is this surprising; for when any series of phenomena passes from the dominion of Wills, whether modified by metaphysical abstractions or not, to the dominion of Laws, the regularity of the latter contrasts so strongly with the instability of the former, as to present an appearance of fatality, which nothing but a very careful examination of the real character of scientific truth can dissipate. And the error is the more likely to occur from the fact that our first types of natural laws are derived from the phenomena of the heavenly bodies. These, being wholly beyond our interference, always suggest the notion of absolute necessity, a notion which it is difficult to prevent from extend-

ing to more complex phenomena, as soon as they are brought within the reach of the Positive method. And it is quite true that Positivism holds the Order of Nature to be in its primary aspects strictly invariable. All variations, whether spontaneous or artificial, are only transient and of secondary import. The conception of unlimited variations would in fact be equivalent to the rejection of Law altogether. But while this accounts for the fact that every new Positive theory is accused of Fatalism, it is equally clear that blind persistence in the accusation shows a very shallow conception of what Positivism really is. For unchangeable as the Order of Nature is in its main aspects, yet all phenomena, except those of Astronomy, admit of being modified in their secondary relations, and this the more as they are more complicated. The Positive spirit, when confined to the subjects of Mathematics and Astronomy, was inevitably fatalist; but this ceased to be the case when it extended to Physics and Chemistry, and especially to Biology, where the margin of variation is very considerable. Now that it embraces Social phenomena, the reproach, however it may have been once deserved, should be heard no longer, since these phenomena, which will for the future form its principal field, admit of larger modification than any others, and that chiefly by our own intervention. It is obvious then that Positivism, far from encouraging indolence, stimulates us to action, especially to social action, far more energetically than any Theological doctrine. It removes all groundless scruples, and prevents us from having recourse to chimeras. It encourages our efforts everywhere, except where they are manifestly useless.

The charge of Optimism applies to Theology rather than to Positivism. The Positivist judges of all historical actions *relatively*, but does not justify them indiscriminately.

For the charge of Optimism there is even less ground than for that of Fatalism. The latter was, to a certain extent, connected with the rise of the Positive spirit; but Optimism is simply a result of Theology, and its influence has always been decreasing with the growth of Positivism. Astronomical laws, it is true, suggest the idea of perfection as naturally as that of necessity. On the other hand, their great simplicity places the defects of the Order of Nature in so clear a light, that optimists would never have sought their arguments in astronomy, were it not that the first elements of the science had to be worked out under the influence of Monotheism, a system which involved the hypothesis of absolute wisdom. But by the theory of development on which the Positive synthesis is here made to

rest, Optimism is discarded as well as Fatalism, in the direct proportion of the intricacy of the phenomena. It is in the most intricate that the defects of Nature, as well as the power of modifying them, become most manifest. With regard, therefore, to social phenomena, the most complex of all, both charges are utterly misplaced. Any optimistic tendencies that writers on social subjects may display, must be due to the fact that their education has not been such as to teach them the nature and conditions of the true scientific spirit. For want of sound logical training, a property peculiar to social phenomena, namely, that they exhibit a greater amount of spontaneous wisdom than might have been expected from their complexity, has been misrepresented by modern writers as though this wisdom were perfect. The phenomena in question are those of intelligent beings who are always occupied in amending the defects of their economy. It is obvious, therefore, that they will show less imperfection than if, in a case equally complicated, the agents could have been blind. The standard by which to judge of action is always to be taken relatively to the social state in which the action takes place. Therefore all historical positions and changes must have at least some grounds of justification; otherwise they would be totally incomprehensible, because inconsistent with the nature of the agents and of the actions performed by them. Now this naturally fosters a dangerous tendency to Optimism in all thinkers, who, whatever their powers may be, have not passed through any strict scientific training, and have consequently never cast off metaphysical and theological modes of thought in the higher subjects. Because every government shows a certain adaptation to the civilisation of its time, they make the loose assertion that the adaptation is perfect; a conception which is of course chimerical. But it is unjust to charge Positivism with errors which are evidently contrary to its true spirit, and merely due to the want of logical and scientific training in those who have hitherto engaged in the study of social questions. The object of Sociology is to explain all historical facts; not to justify them indiscriminately, as is done by those who are unable to distinguish the influence of the agent from that of surrounding circumstances.

The word *Positive* connotes all the highest intellectual at-

On reviewing this brief sketch of the intellectual character of Positivism, it will be seen that all its essential attributes are summed up in the word *Positive*, which I applied to the new

philosophy at its outset. All the languages of Western Europe agree in understanding by this word and its derivatives the two qualities of *reality* and *usefulness*. Combining these, we get at once an adequate definition of the true philosophic spirit, which, after all, is nothing but good sense generalised and put into a systematic form. The term also implies in all European languages, *certainty* and *precision*, qualities by which the intellect of modern nations is markedly distinguished from that of antiquity. Again, the ordinary acceptation of the term implies a directly *organic* tendency. Now the metaphysical spirit is incapable of organising; it can only criticise. This distinguishes it from the Positive spirit, although for a time they had a common sphere of action. By speaking of Positivism as organic, we imply that it has a social purpose; that purpose being to supersede Theology in the spiritual direction of the human race.

tributes, and will ultimately have a moral significance.

But the word will bear yet a further meaning. The organic character of the system leads us naturally to another of its attributes, namely, its invariable *relativity*. Modern thinkers will never rise above that critical position which they have hitherto taken up towards the past, except by repudiating all absolute principles. This last meaning is more latent than the others, but is really contained in the term. It will soon become generally accepted, and the word *Positive* will be understood to mean *relative* as much as it now means *organic*, *precise*, *certain*, *useful*, and *real*. Thus the highest attributes of human wisdom have, with one exception, been gradually condensed into a single expressive term. All that is now wanting is that the word should denote what at first could form no part of the meaning, the union of moral with intellectual qualities. At present, only the latter are included; but the course of modern progress makes it certain that the conception implied by the word Positive, will ultimately have a more direct reference to the heart than to the understanding. For it will soon be felt by all that the tendency of Positivism, and that by virtue of its primary characteristic, reality, is to make Feeling systematically supreme over Reason as well as over Activity. After all, the change consists simply in realising the full etymological value of the word *Philosophy*. For it was impossible to realise it until moral and mental conditions had been reconciled; and this has been now done by the foundation of a Positive science of society.

CHAPTER II.

THE SOCIAL ASPECT OF POSITIVISM, AS SHOWN BY ITS CONNECTION WITH THE GENERAL REVOLUTIONARY MOVEMENT OF WESTERN EUROPE.

As the chief characteristic of Positive Philosophy is the preponderance of the social point of view through the whole range of speculation, its efficiency for the purposes of practical life is involved in the very spirit of the system. When this spirit is rightly understood, we find that it leads at once to an object far higher than that of satisfying our scientific curiosity; the object, namely, of organising human life. Conversely, this practical aspect of Positive Philosophy exercises the most salutary influence upon its speculative character. By keeping constantly before us the necessity of concentrating all scientific efforts upon the social object which constitutes their value, we take the best possible means of checking the tendency inherent in all abstract enquiries to degenerate into useless digressions. But this general connection between theory and practice would not by itself be sufficient for our purpose. It would be impossible to secure the acceptance of a mental discipline, so new and so difficult, were it not for considerations derived from the general conditions of modern society; considerations calculated to impress philosophers with a more definite sense of obligation to do their utmost towards satisfying the wants of the time. By thus arousing public sympathies and showing that the success of Positivism is a matter of permanent and general importance, the coherence of the system as well as the elevation of its aims will be placed beyond dispute. We have hitherto been regarding Positivism as the issue in which intellectual development necessarily results. We have now to view it from the social side; for until we have done this, it is impossible to form a true conception of it.

The relation of Positivism to the French Revolution.

And to do this, all that is here necessary is to point out the close relation in which the new philosophy stands to the whole course of the French Revolution. This revolution has now been agitating Western nations for sixty years. It is the final issue of the vast transition through which we have been passing during the five previous centuries.

In this great crisis there are naturally two principal phases; of which only the first, or negative, phase has yet been accomplished. In it we gave the last blow to the old system, but without arriving at any fixed and distinct prospect of the new. In the second or positive phase, which is at last beginning, a basis for the new social state has to be constructed. The first phase led as its ultimate result to the formation of a sound philosophical system: and by this system the second phase will be directed. It is this twofold connection which we are now to consider.

The negative or destructive phase of the Revolution stimulated the desire of Progress, and consequently the study of social phenomena.

The strong reaction which was exercised upon the intellect by the first great shock of revolution was absolutely necessary to rouse and sustain our mental efforts in the search for a new system. For the greatest thinkers of the eighteenth century had been blinded to the true character of the new state by the effete remnants of the old. And the shock was especially necessary for the foundation of social science. For the basis of that science is the conception of human Progress, a conception which nothing but the Revolution could have brought forward into sufficient prominence.

Social Order was regarded by the ancients as stationary: and its theory under this provisional aspect was admirably sketched out by the great Aristotle. In this respect the case of Sociology resembles that of Biology. In Biology statical conceptions were attained without the least knowledge of dynamical laws. Similarly, the social speculations of antiquity are entirely devoid of the conception of Progress. Their historical field was too narrow to indicate any continuous movement of Humanity. It was not till the Middle Ages that this movement became sufficiently manifest to inspire the feeling that we were tending towards a state of increased perfection. It was then seen by all that Catholicism was superior to Polytheism and Judaism; and this was afterwards confirmed by the corresponding political improvement produced by the substitution of Feudalism for Roman government. Confused as this first

feeling of human Progress was, it was yet very intense and very largely diffused; though it lost much of its vitality in the theological and metaphysical discussions of later centuries. It is here that we must look if we would understand that ardour in the cause of Progress which is peculiar to the Western family of nations, and which has been strong enough to check many sophistical delusions, especially in the countries where the noble aspirations of the Middle Ages have been least impaired by the metaphysical theories of Protestantism or Deism.

But whatever the importance of this nascent feeling, it was very far from sufficient to establish the conception of Progress as a fundamental principle of human society. To demonstrate any kind of progression, at least three terms are requisite. Now the absolute character of theological philosophy, under which the comparison between Polytheism and Catholicism was instituted, prevented men from conceiving the bare possibility of any further stage. The limits of perfection were supposed to have been reached by the mediæval system, and beyond it there was nothing but the Christian Utopia of a future life. The decline of mediæval theology soon set the imagination free from any such obstacles; but it led at the same time to a mental reaction which for a long time was unfavourable to the development of this first conception of Progress. It brought a feeling of blind antipathy to the Middle Ages. Almost all thinkers in their repugnance to Catholic dogmas were seized with such irrational admiration for Antiquity as entirely to ignore the social superiority of the mediæval system; and it was only among the untaught masses, especially in the countries preserved from Protestantism, that any real feeling of this superiority was retained. It was not till the middle of the seventeenth century that modern thinkers began to dwell on the conception of Progress, which re-appeared then under a new aspect. Conclusive evidence had by that time been furnished that the more civilised portion of our race had advanced in science and industry, and even, though not so unquestionably, in the fine arts. But these aspects were only partial: and though undoubtedly the source of the more systematic views held by our own century upon the subject, they were not enough to demonstrate the fact of a progression. And indeed, from the social point of view, so far more important than any other, Progress seemed more doubtful than it had been in the Middle Ages.

But this condition of opinion was changed by the revolutionary shock which impelled France, the normal centre of Western Europe, to apply itself to the task of social regeneration. A third term of comparison, that is to say the type on which modern society is being moulded, now presented itself; though it lay as yet in a distant and obscure future. Compared with the mediæval system it was seen to be an advance as great as that which justified our ancestors of chivalrous times in asserting superiority to their predecessors of antiquity. Until the destruction of Catholic Feudalism became an overt fact, its effete remnants had concealed the political future, and the fact of continuous progress in society had always remained uncertain. Social phenomena have this peculiarity, that the object observed undergoes a process of development as well as and simultaneously with the observer. Now up to the time of the Revolution, political development, on which the principal argument for the theory of Progress must always be based, corresponded in its imperfection to the incapacity of the scientific spirit to frame the theory of it. A century ago, thinkers of the greatest eminence were unable to conceive of a really continuous progression; and Humanity, as they thought, was destined to move in circles or in oscillations. But under the influence of the Revolution a real sense of human development has arisen spontaneously and with more or less result, in minds of the most ordinary cast: first in France, and subsequently throughout the whole of Western Europe. In this respect the crisis has been most salutary; it has given us that mental audacity as well as strength without which the conception could never have arisen. This conception is the basis of social science and therefore of all Positive Philosophy; since it is only from the social aspect that Positive Philosophy admits of being viewed as a connected whole. Without the theory of Progress, the theory of Order, even supposing that it could be formed, would be inadequate as a basis for Sociology. It is essential that the two should be combined. The very fact that Progress, however viewed, is nothing but the development of Order, shows that Order cannot be fully manifested without Progress. The dependence of Positivism upon the French Revolution may now be understood more clearly. Nor was it by a merely fortuitous coincidence that by this time the introductory course of scientific knowledge

by which the mind is prepared for Positivism should have been sufficiently completed.

But we must here observe that, beneficial as the intellectual reaction of this great crisis undoubtedly was, its effects could not be realised until the ardour of the revolutionary spirit had been to some extent weakened. The dazzling light thrown upon the Future for some time obscured our vision of the Past. It disclosed, though obscurely, the third term of the social progression; but it prevented us from fairly appreciating the second term. It encouraged that blind aversion to the Middle Ages, which had been inspired by the emancipating process of modern times; a feeling which had once been necessary to induce us to abandon the old system. The suppression of this intermediate step would be as fatal to the conception of Progress as the absence of the last; because this last differs too widely from the first to admit of any direct comparison with it. Right views upon the subject were impossible therefore until full justice had been rendered to the Middle Ages, which form at once the point of union and of separation between ancient and modern history. Now it was quite impossible to do this as long as the excitement of the first years of the revolution lasted. In this respect the philosophical reaction, organised at the beginning of our century by the great De Maistre, was of material assistance in preparing the true theory of Progress. His school was of brief duration, and it was no doubt animated by a retrograde spirit; but it will always be ranked among the necessary antecedents of the Positive system; although its works are now entirely superseded by the rise of the new philosophy, which in a more perfect form has embodied all their chief results.

What was required therefore for the discovery of Sociological laws, and for the establishment upon these laws of a sound philosophical system, was an intellect in the vigour of youth, imbued with all the ardour of the revolutionary spirit, and yet spontaneously assimilating all that was valuable in the attempts of the retrograde school to appreciate the historical importance of the Middle Ages. In this way and in no other could the true spirit of history arise. For that spirit consists in the sense of human continuity, which had hitherto been felt by no one, not even by my illustrious and unfortunate predecessor Condorcet. Meantime the genius of Gall was completing

the recent attempts to systematise biology, by commencing the study of the internal functions of the brain; as far at least as these could be understood from the phenomena of individual as distinct from social development. This completes the series of social and intellectual conditions by which the discovery of sociological laws, and consequently the foundation of Positivism, was fixed for the precise date at which I began my philosophical career: that is to say, one generation after the progressive dictatorship of the Convention, and almost immediately after the fall of the retrograde tyranny of Bonaparte.

Thus it appears that the revolutionary movement, and the long period of reaction which succeeded it, were alike necessary, before the new general doctrine could be distinctly conceived of as a whole. And if this preparation was needed for the establishment of Positivism as a philosophical system, far more needful was it for the recognition of its social value. For it guaranteed free exposition and discussion of opinion: and it led the public to look to Positivism as the system which contained in germ the ultimate solution of social problems. This is a point so obvious that we need not dwell upon it further.

Having satisfied ourselves of the dependence of Positivism upon the first phase of the Revolution, we have now to consider it as the future guide of the second phase.

The constructive phase of the Revolution. The first attempts to construct failed, being based on destructive principles.

It is often supposed that the destruction of the old régime was brought about by the Revolution. But history when carefully examined points to a very different conclusion. It shows that the Revolution was not the cause but the consequence of the utter decomposition of the mediæval system; a process which had been going on for five centuries throughout Western Europe, and especially in France; spontaneously at first, and afterwards in a more systematic way. The Revolution, far from protracting the negative movement of previous centuries, was a bar to its further extension. It was a final outbreak in which men showed their irrevocable purpose of abandoning the old system altogether, and of proceeding at once to the task of entire reconstruction. The most conclusive proof of this intention was given by the abolition of royalty; which had been the rallying point of all the decaying remnants of the old French constitution. But with this exception, which only occupied the Convention during its first sitting, the constructive tendencies of the movement were apparent from its outset;

and they showed themselves still more clearly as soon as the republican spirit had become predominant. It is obvious, however, that strong as these tendencies may have been, the first period of the Revolution produced results of an extremely negative and destructive kind. In fact the movement was in this respect a failure. This is partly to be attributed to the pressing necessities of the hard struggle for national independence which France maintained so gloriously against the combined attacks of the retrograde nations of Europe. But it is far more largely owing to the purely critical character of the metaphysical doctrines by which the revolutionary spirit was at that time directed.

The negative and the positive movements which have been going on in Western Europe since the close of the Middle Ages, have been of course connected with each other. But the former has necessarily advanced with greater rapidity than the latter. The old system had so entirely declined, that a desire for social regeneration had become general, before the groundwork of the new system had been sufficiently completed for its true character to be understood. As we have just seen, the doctrine by which social regeneration is now to be directed, could not have arisen previously to the Revolution. The impulse which the Revolution gave to thought was indispensable to its formation. Here then was an insurmountable fatality by which men were forced to make use of the critical principles which had been found serviceable in former struggles, as the only available instruments of construction. As soon as the old order had once been fairly abandoned, there was of course no utility whatever in the negative philosophy. But its doctrines had become familiar to men's minds, and its motto of 'Liberty and Equality,' was at that time the one most compatible with social progress. Thus the first stage of the revolutionary movement was accomplished under the influence of principles that had become obsolete, and that were quite inadequate to the new task required of them.

For constructive purposes the revolutionary philosophy was valueless; except so far as it put forward a vague programme of the political future, founded on sentiment rather than conviction, and unaccompanied by any explanation of the right mode of realising it. In default of organic principles the doctrines of the critical school were employed: and the result

speedily showed their inherent tendency to anarchy; a tendency as perilous to the germs of the new order as to the ruins of the old. The experiment was tried once for all, and it left such ineffaceable memories that it is not probable that any serious attempt will be made to repeat it. The incapacity for construction of the doctrine in which the revolutionary spirit had embodied itself was placed beyond the reach of doubt. The result was to impress everyone with the deep urgent necessity for social renovation; but the principles of that renovation were still left undetermined.

Counter-revolution from 1794 to 1830.

In this condition of philosophical and political opinion, the necessity of Order was felt to be paramount, and a long period of reaction ensued. Dating from the official Deism introduced by Robespierre, it reached its height under the aggressive system of Bonaparte, and it was feebly protracted, in spite of the peace of 1815, by his insignificant successors. The only permanent result of this period was the historical and doctrinal evidence brought forward by De Maistre and his school, of the social inutility of modern metaphysics, while at the same time their intellectual weakness was being proved by the successful attempts of Cabanis, and still more of Gall, to extend the Positive method to the highest biological questions. In all other respects this elaborate attempt to prevent the final emancipation of Humanity proved a complete failure; in fact, it led to a revival of the instinct of Progress. Strong antipathies were roused everywhere by these fruitless efforts at reconstructing a system which had become so entirely obsolete, that even those who were labouring to rebuild it no longer understood its character or the conditions of its existence.

A re-awakening of the revolutionary spirit was then inevitable; and it took place as soon as peace was established, and the chief support of the retrograde system had been thus removed. The doctrines of negation were called back to life; but very little illusion now remained as to their capacity for organising. In want of something better, men accepted them as a means of resisting retrograde principles, just as these last had owed their apparent success to the necessity of checking the tendency to anarchy. Amidst these fresh debates on worn-out subjects, the public soon became aware that a final solution of the question had not yet arisen even in germ. It therefore concerned itself for little except the maintenance of Order and

Liberty; conditions as indispensable for the free action of philosophy as for material prosperity. The whole position was most favourable for the construction of a definite solution; and it was, in fact, during the last phase of the retrograde movement that the elementary principle of a solution was furnished, by my discovery in 1822 of the two-fold law of intellectual development.

Political stagnation between 1830 and 1848.

The apparent indifference of the public, to whom all the existing parties seemed equally devoid of insight into the political future, was at last mistaken by a blind government for tacit consent to its unwise schemes. The cause of Progress was in danger. Then came the memorable crisis of 1830, by which the system of reaction, introduced thirty-six years previously, was brought to an end. The convictions which that system inspired were indeed so superficial, that its supporters came of their own accord to disavow them, and uphold in their own fashion the chief revolutionary doctrines. These again were abandoned by their previous supporters on their accession to power. When the history of these times is written, nothing will give a clearer view of the revulsion of feeling on both sides than the debates which took place on Liberty of Education. Within a period of twenty years, it was alternately demanded and refused by both; and this in behalf of the same principles, as they were called, though it was in reality a question of interest rather than principle on either side.

All previous convictions being thus thoroughly upset, more room was left for the instinctive feeling of the public; and the question of reconciling the spirit of Order with that of Progress now came into prominence, as the final mode of stating the great social problem. But this only made the absence of a solution more manifest; and the principle of the solution existed nowhere but in Positivism, which as yet was immature. All the opinions of the day had become alike utterly incompatible, both with Order and with Progress. The Conservative school undertook to reconcile the two; but it had no constructive power; and the only result of its doctrines was to give equal encouragement to anarchy and to reaction, so as to be able always to neutralise the one by the other. The establishment of Constitutional Monarchy was now put forward as the ultimate issue of the great Revolution. But no one could seriously place any real confidence in a system so alien to the whole cha-

racter of French history, offering as it did nothing but a superficial and unwise imitation of a political anomaly essentially peculiar to England.

The period then between 1830 and 1848 may be regarded as a natural pause in the political movement. The reaction which succeeded the original crisis had exhausted itself; but the final or organic phase of the Revolution was still delayed for want of definite principles to guide it. No conception had been formed of it, except by a small number of philosophic minds who had taken their stand upon the recently established laws of social science, and had found themselves able, without recourse to any chimerical views, to gain some general insight into the political future, of which Condorcet, my principal predecessor, knew so little. But it was impossible for the regenerating doctrine to spread more widely and to be accepted as the peaceful solution of social problems, until a distinct refutation had been given of the false assertion so authoritatively made that the parliamentary system was the ultimate issue of the Revolution. This notion once destroyed, the work of spiritual reorganisation should be left entirely to the free efforts of independent thinkers. In these respects our last political change (1848) will have accomplished all that is required.

The present position, 1848–1850. Republicanism involves the great principle of subordinating Politics to Morals.

Thanks to the instinctive sense and vigour of our working classes, the reactionist leanings of the Orleanist government, which had become hostile to the purpose for which it was originally instituted, have at last brought about the final abolition of monarchy in France. The prestige of monarchy had long been lost, and it now only impeded Progress, without being of any real benefit to Order. By its fictitious supremacy it directly hindered the work of spiritual reformation, whilst the measure of real power which it possessed was insufficient to control the wretched political agitation maintained by animosities of a purely personal character.

Viewed negatively, the principle of Republicanism sums up the first phase of the Revolution. It precludes the possibility of recurrence to Royalism, which, ever since the second half of the reign of Louis XIV., has been the rallying point of all reactionist tendencies. Interpreting the principle in its positive sense, we may regard it as a direct step towards the final regeneration of society. By consecrating all human forces

of whatever kind to the general service of the community, republicanism recognises the doctrine of subordinating Politics to Morals. Of course it is as a feeling rather than as a principle that this doctrine is at present adopted; but it could not obtain acceptance in any other way; and even when put forward in a more systematic shape, it is upon the aid of feeling that it will principally rely, as I have shown in the previous chapter. In this respect France has proved worthy of her position as the leader of the great family of Western nations, and has in reality already entered upon the normal state. Without the intervention of any theological system, she has asserted the true principle on which society should rest, a principle which originated in the Middle Ages under the impulse of Catholicism; but for the general acceptance of which a sounder philosophy and more suitable circumstances were necessary. The direct tendency, then, of the French Republic is to sanction the fundamental principle of Positivism, the preponderance, namely, of Feeling over Intellect and Activity. Starting from this point, public opinion will soon be convinced that the work of organising society on republican principles is one which can only be performed by the new philosophy.

It gives prominence to the problem of reconciling Order and Progress.

The whole position brings into fuller prominence the fundamental problem previously proposed, of reconciling Order and Progress. The urgent necessity of doing so is acknowledged by all; but the utter incapacity of any of the existing schools of opinion to realise it becomes increasingly evident. The abolition of monarchy removes the most important obstacle to social Progress; but at the same time it deprives us of the only remaining guarantee for public Order. Thus the time is doubly favourable to constructive tendencies; yet at present there are no opinions which possess more than the purely negative value of checking, and that very imperfectly, the error opposite to their own. In a position which guarantees Progress and compromises Order, it is naturally for the latter that the greatest anxiety is felt; and we are still without any organ capable of systematically defending it. Yet experience should have taught us how extremely fragile every government must be which is purely material; that is, which is based solely upon self-interest, and is destitute of sympathies and convictions. On the other hand, spiritual order is not to be hoped for at

present in the absence of any doctrine which commands general respect. Even the social instinct is a force on the political value of which we cannot always rely; for when not based on some definite principle, it not unfrequently becomes a source of disturbance. Hence, we are driven back to the continuance of a material system of government, although its inadequacy is acknowledged by all. In a republic, however, such a government cannot employ its most efficient instrument, corruption. It has to resort instead to repressive measures of a more or less transitory kind, every time that the danger of anarchy becomes too threatening. These occasional measures, however, naturally proportion themselves to the necessities of the case. Thus, though Order is exposed to greater perils than Progress, it can count on more powerful resources for its defence. Shortly after the publication of the first edition of this work, the extraordinary outbreak of June 1848, proved that the republic could call into play, and indeed could push to excess, in the cause of public Order, forces far greater than those of the monarchy. Thus royalty no longer possesses that monopoly of preserving Order, which has hitherto induced a few sincere and thinking men to continue to support it; and henceforth the sole political characteristic which it retains is that of obstructing Progress. And yet by another reaction of this contradictory position of affairs, the monarchical party seems at present to have become the organ of resistance in behalf of material Order. Retrograde as its doctrines are, yet from their still retaining a certain organic tendency, the conservative instincts rally round them. To this the progressive instincts offer no serious obstacle, their insufficiency for the present needs being more or less distinctly recognised. It is not to the monarchical party, however, that we must look for conservative principles; for in this quarter they are wholly abandoned, and unhesitating adoption of every revolutionary principle is resorted to as a means of retaining power; so that the doctrines of the revolution would seemed fated to close their existence in the retrograde camp. So urgent is the need of Order that we are driven to accept for the moment a party which has lost all its old convictions, and which had apparently become extinct before the Republic began. Positivism, and Positivism alone, can disentangle and terminate this anomalous position. The principle upon which it depends is manifestly

this: As long as Progress tends towards anarchy, so long will Order continue to be retrograde. But the retrograde movement never really attains its object: indeed its principles are always neutralised by inconsistent concessions. Judged by the boastful language of its leaders, we might imagine that it was destroying republicanism; whereas the movement would not exist at all, but for the peculiar circumstances in which we are placed; circumstances which are forced into greater prominence by the foolish opposition of most of the authorities. As soon as the instinct of political improvement has placed itself under systematic guidance, its growth will bear down all resistance; and then the reason of its present stagnation will be patent to all.

It brings the metaphysical revolutionary schools into discredit.

And for this Theology is, unawares, preparing the way. Its apparent preponderance places Positivism in precisely that position which I wished for ten years ago. The two organic principles can now be brought side by side, and their relative strength tested, without the complication of any metaphysical considerations. For the incoherence of metaphysical systems is now recognised, and they are finally decaying under the very political system which seemed at one time likely to promote their acceptance. Construction is seen by all to be the thing wanted; and men are rapidly becoming aware of the utter hollowness of all schools which confine themselves to protests against the institutions of theology, while admitting its essential principles. So defunct, indeed, have these schools become, that they can no longer fulfil even their old office of destruction. This has fallen now as an accessory task upon Positivism, which offers the only systematic guarantee against retrogression, as well as against anarchy. Psychologists, strictly so called, have already for the most part disappeared with the fall of constitutional monarchy; so close is the relation between these two importations from Protestantism. It seemed likely therefore that the Ideologists, their natural rivals, would regain their influence with the people. But even they cannot win back the confidence reposed in them during the great Revolution, because the doctrines in virtue of which it was then given are now so utterly exploded. The most advanced of their number, unworthy successors of the school of Voltaire and Danton, have shown themselves thoroughly incapable either morally or intellectually of directing the second phase of the revolution, which they are

hardly able to distinguish from the first phase. Formerly I had taken as their type a man of far superior merit, the noble Armand Carrel, whose death was such a grievous loss to the republican cause. But he was a complete exception to the general rule. True republican convictions were impossible with men who had been schooled in parliamentary intrigues, and who had directed or aided the pertinacious efforts of the French press to rehabilitate the name of Bonaparte. Their accession to power was futile; for they could only maintain material order by calling in the retrograde party; and they soon became mere auxiliaries of this party, disgracefully abjuring all their philosophical convictions. There is one proceeding which, though it is but an episode in the course of events, will always remain as a test of the true character of this unnatural alliance. I allude to the Roman expedition of 1849; a detestable and contemptible act, for which just penalties will speedily be imposed on all who were accessory to it; not to speak of the damnatory verdict of history. But precisely the same hypocritical opposition to progress has been exhibited by the other class of Deists, the disciples, that is, of Rousseau, who profess to adopt Robespierre's policy. Having had no share in the government, they have not so entirely lost their hold upon the people; but they are at the present time totally devoid of political coherence. Their wild anarchy is incompatible with the general tone of feeling maintained by the industrial activity, the scientific spirit, and the esthetic culture of modern life. These Professors of the Guillotine, as they may be called, whose superficial sophisms would reduce exceptional outbreaks of popular fury into a cold-blooded system, soon found themselves forced, for the sake of popularity, to sanction the law which very properly abolished capital punishment for political offences. In the same way they are now obliged to disown the only real meaning of the red flag which serves to distinguish their party, too vague as it is for any other name. Equally wrong have they shown themselves in interpreting the tendencies of the working classes, from being so entirely taken up with questions of abstract rights. The people have allowed these rights to be taken from them without a struggle whenever the cause of Order has seemed to require it; yet they still persist, mechanically, in maintaining that it is on questions of this sort that the solution of all our difficulties depends. Taking for their political ideal a short

and anomalous period of our history which is never likely to recur, they are always attempting to suppress liberty for the sake of what they call progress. In a time of unchangeable peace they are the only real supporters of war. Their conception of the organisation of labour is simply to destroy the industrial hierarchy of capitalist and workman established in the Middle Ages; and, in fact, in every respect these sophistical anarchists are utterly out of keeping with the century in which they live. There are some, it is true, who still retain a measure of influence with the working classes, incapable and unworthy though they are of their position. But their credit is rapidly declining; and it is not likely to become dangerous at a time when political enthusiasm is no longer to be won by metaphysical prejudices. The only effect really produced by this party of disorder, is to serve as a bugbear for the benefit of the retrograde party, who thus obtain official support from the middle class, in a way which is quite contrary to all the principles and habits of that class. It is very improbable that these foolish levellers will ever succeed to power. Should they do so, however, their reign will be short, and will soon result in their final extinction; because it will convince the people of their profound incapacity to direct the regeneration of Europe. The position of affairs, therefore, is now distinct and clear; and it is leading men to withdraw their confidence from all metaphysical schools, as they had already withdrawn it from theology. In this general discredit of all the old systems the way becomes clear for Positivism, the only school which harmonises with the real tendencies as well as with the essential needs of the nineteenth century.

And it proves to all the necessity of a true spiritual power; a body of thinkers whose business is to study and to teach principles, holding aloof from political action.

In this explanation of the recent position of French affairs one point yet remains to be insisted on. We have seen from the general course of the philosophical, and yet more of the political, movement, the urgent necessity for a universal doctrine capable of checking erroneous action, and of avoiding or moderating popular outbreaks. But there is another need equally manifest, the need of a spiritual power, without which it would be utterly impossible to bring our philosophy to bear upon practical life. Widely divergent as the various metaphysical sects are, there is one point in which they all spontaneously agree; that is, in repudiating the distinction between temporal and spiritual authority. This has been the great revolutionary

principle ever since the fourteenth century, and more especially since the rise of Protestantism. It originated in repugnance to the mediæval system. The so-called philosophers of our time, whether psychologists or ideologists, have, like their Greek predecessors, always aimed at a complete concentration of all social powers; and they have even spread this delusion among the students of special sciences. At present there is no appreciation, except in the Positive system, of that instinctive sagacity which led all the great men of the Middle Ages to institute for the first time the separation of moral from political authority. It was a masterpiece of human wisdom; but it was premature, and could not be permanently successful at a time when men were still governed on theological principles, and practical life still retained its military character. This separation of powers, on which the final organisation of society will principally depend, is understood and valued nowhere but in the new school of philosophy, if we except the unconscious and tacit admiration for it which still exists in the countries from which Protestantism has been excluded. From the outset of the Revolution, the pride of theorists has always made them wish to become socially despotic; a state of things to which they have ever looked forward as their political ideal. Public opinion has by this time grown far too enlightened to allow any practical realisation of a notion at once so chimerical and so retrograde. But public opinion not being as yet sufficiently organised, efforts in this direction are constantly being made. The longing among metaphysical reformers for practical as well as theoretical supremacy is now greater than ever; because, from the changed state of affairs, their ambition is no longer limited to mere administrative functions. Their various views diverge so widely, and all find so little sympathy in the public, that there is not much fear of their ever being able to check free discussion to any serious extent by giving legal sanction to their own particular doctrine. But quite enough has been attempted to convince everyone how essentially despotic every theory of society must be which opposes this fundamental principle of modern polity, the permanent separation of spiritual from temporal power. The disturbances caused by metaphysical ambition corroborate, then, the view urged so conclusively by the adherents of the new school, that this division of powers is equally essential to Order and to Progress. If

Positivist thinkers continue to withstand all temptations to mix actively in politics, and go on quietly with their own work amidst the unmeaning agitation around them, they will ultimately make the impartial portion of the public familiar with this great conception. It will henceforth be judged irrespectively of the religious doctrines with which it was originally connected. Men will involuntarily contrast it with other systems, and will see more and more clearly that Positive principles afford the only basis for true freedom as well as for true union. They alone can tolerate full discussion, because they alone rest upon solid proof. Men's practical wisdom, guided by the peculiar nature of our political position, will react strongly upon philosophers and keep them strictly to their sphere of moral and intellectual influence. The slightest tendency towards the assumption of political power will be checked, and the desire for it will be considered as a certain sign of mental weakness, and indeed of moral deficiency. Now that royalty is abolished, all true thinkers are secure of perfect freedom of thought, and even of expression, as long as they abide by the necessary conditions of public order. Royalty was the last remnant of the system of castes, which gave the monopoly of deciding on important social questions to a special family; its abolition completes the process of theological emancipation. Of course the magistrates of a republic may show despotic tendencies; but they can never become very dangerous where power is held on so brief a tenure, and where, even when concentrated in a single person, it emanates from suffrage, incompetent as that may be. It is easy for the Positivist to show that these functionaries know very little more than their constituents of the logical and scientific conditions necessary for the systematic working out of moral and social doctrines. Such authorities, though devoid of any spiritual sanction, may, however, command obedience in the name of Order. But they can never be really respected, unless they adhere scrupulously to their temporal functions, without claiming the least authority over thought. Even before the central power falls into the hands of men really fit to wield it, the republican character of our government will have forced this conviction upon a nation that has now got rid of all political fanaticism, whether of a retrograde or anarchical kind. And the conviction is the more certain to arise, because practical

authorities will become more and more absorbed in the maintenance of material order, and will therefore leave the question of spiritual order to the unrestricted efforts of thinkers. It is neither by accident nor through personal influence that my own career exhibits so large an advance in freedom of expression, whether in my writings or subsequently in public lectures, and this under governments all of which were more or less oppressive. Every true philosopher will receive the same licence, if, like myself, he offers the intellectual and moral guarantees which the public and the civil power are fairly entitled to expect from the systematic organs of Humanity. The necessity of controlling levellers may lead to occasional acts of unwise violence. But I am convinced that respect will always be shown to constructive thinkers, and that they will soon be called in to the assistance of public order, which will not be able to exist much longer without the sanction of some rational principle.

The need of a spiritual power is common to the whole Republic of Western Europe.

The result then, of the important political changes which have recently taken place is this. The second phase of the Revolution, which hitherto has been restricted to a few advanced minds, is now being entered by the public, and men are rapidly forming juster views of its true character. It is becoming recognised that the only firm basis for a reform of our political institutions, is a complete reorganisation of opinion and of life; and the way is open for the new religious doctrine to direct this work. I have thus explained the way in which the social mission of Positivism connects itself with the spontaneous changes which are taking place in France, the centre of the revolutionary movement. But France will not be the only scene of these reorganising efforts. Judging on sound historical principles, we cannot doubt that they will embrace the whole extent of Western Europe.

During the five centuries of revolutionary transition which have elapsed since the Middle Ages, we have lost sight of the fact that in all fundamental questions the Western nations form one political system. It was under Catholic Feudalism that they were first united; a union for which their incorporation into the Roman empire had prepared them, and which was finally organised by the incomparable genius of Charlemagne. In spite of national differences, embittered as they were afterwards by theological discord, this great Republic has in modern

times shown intellectual and social growth both in the positive and negative direction, to which other portions of the human race, even in Europe, can show no parallel. The disruption of Catholicism, and the decline of Chivalry, at first seriously impaired this feeling of relationship. But it soon began to show itself again under new forms. It rests now upon the basis, inadequate though it be, of community in industrial development, in esthetic culture, and in scientific discovery. Amidst the disorganised state of political affairs, which have obviously been tending towards some radical change, this similarity in civilisation has produced a growing conviction that we are all participating in one and the same social movement; a movement limited as yet to our own family of nations. The first step in the great crisis was necessarily taken by the French nation, because it was better prepared than any other. It was there that the old order of things had been most thoroughly uprooted, and that most had been done in working out the materials of the new. But the strong sympathies which the outbreak of our revolution aroused in every part of Western Europe, showed that our sister-nations were but granting us the honourable post of danger in a movement in which all the nobler portion of Humanity was to participate. And this was the feeling proclaimed by the great republican assembly in the midst of its war of defence. The military extravagances which followed, and which form the distinguishing feature of the counter-revolution, of course checked the feeling of union on both sides. But so deeply was it rooted in all the antecedents of modern history that peace soon restored it to life, in spite of the pertinacious efforts of all parties interested in maintaining unnatural separation between France and other countries. What greatly facilitates this tendency is the decline of every form of theology, which removes the chief source of former disagreement. During the last phase of the counter-revolution, and still more during the long pause in the political movement which followed, each member of the group entered upon a series of revolutionary efforts more or less resembling those of the central nation. And our recent political changes cannot but strengthen this tendency; though of course with nations less fully prepared the results of these efforts have at present been less important than in France. Meanwhile it is evident that this uniform condition of internal agitation gives increased

security for peace, by which its extension had been originally facilitated. And thus, although there is no organised international union resembling that of the Middle Ages, yet the pacific habits and intellectual culture of modern life have already been so diffused as to call out an instinct of fraternity stronger than any that has ever existed before, and sufficient to prevent the subject of social regeneration from being ever regarded as a merely national question.

And this is the point of view which displays the character of the second phase of the Revolution in its truest light. The first phase, although in its results advantageous to other nations, was necessarily conducted as if peculiar to France, because no other country was ripe for the original outbreak. Indeed French nationality was stimulated by the necessity of resisting the counter-revolutionary coalition. But the final and constructive phase, which has begun now that the national limits of the crisis have been reached, should always be regarded as common to the whole of Western Europe. For it consists essentially in spiritual reorganisation: and the need of this in one shape or other presses already with almost equal force upon each of the five nations who make up the great Western family. Conversely, the more occidental the character of the reforming movement, the greater will be the prominence given to intellectual and moral regeneration as compared with mere modifications of government, in which of course there must be very considerable national differences. The first social need of Western Europe is community in belief and in habits of life; and this must be based upon a uniform system of education controlled and applied by a spiritual power that shall be accepted by all. This want satisfied, the reconstruction of governments may be carried out in accordance with the special requirements of each nation. Difference in this respect is legitimate: it will not affect the essential unity of the Positivist Republic, which will be bound together by more complete and durable ties than the Catholic Republic of the Middle Ages.

Not only then do we find from the whole condition of Western Europe that the movement of opinion transcends in importance all political agitation; but we find that everything points to the necessity of establishing a spiritual power, as the sole means of directing this extension and systematic reform of

opinion and of life with the requisite consistency and largeness of view. We now see that the old revolutionary prejudice of confounding temporal and spiritual power is directly antagonistic to social regeneration, although it once aided the preparation for it. In the first place it stimulates the sense of nationality, which ought to be subordinate to larger feelings of international fraternity. And at the same time, with the view of satisfying the conditions of uniformity which are so obviously required for the solution of the common problem, it encourages efforts for forcible incorporation of all the nations into one, efforts as dangerous as they are fruitless.

This Republic consists of the Italian, Spanish, British, and German populations grouped round France as their centre.

My work on Positive Philosophy contains a detailed historical explanation of what I mean by the expression, Western Europe. But the conception is one of such importance in relation to the questions of our time, that I shall now proceed to enumerate and arrange in their order the elements of which this great family of nations consists.

Since the fall of the Roman empire, and more especially from the time of Charlemagne, France has always been the centre, socially as well as geographically, of this Western region which may be called the nucleus of Humanity. On the one great occasion of united political action on the part of Western Europe, that is, in the crusades of the 11th and 12th century, it was evidently France that took the initiative. It is true that when the decomposition of Catholicism began to assume a systematic form, the centre of the movement for two centuries shifted its position. It was Germany that gave birth to the metaphysical principles of negation. Their first political application was in the Dutch and English revolutions, which, incomplete as they were, owing to insufficient intellectual preparation, yet served as preludes to the great final crisis. These preludes were most important as showing the real social tendency of the critical doctrines; but it was reserved for France to co-ordinate these doctrines into a consistent system and to propagate them successfully. France then resumed her position as the principal centre in which the great moral and political questions were to be worked out. And this position she will in all probability retain, as in fact it is only a recurrence to the normal organisation of the Western Republic which had been temporarily modified to meet special conditions. Fresh displacements of the centre of the social movement are

not to be expected, unless in a future too distant to engage our attention. They can indeed only be the result of wide extension of our advanced civilisation beyond European limits, as will be explained in the conclusion of this work.

North and south of this natural centre, we find two pairs of nations, between which France will always form an intermediate link, partly from her geographical position, and also from her language and manners. The first pair is for the most part, Protestant. It comprises, first, the great Germanic body, with the numerous nations that may be regarded as its offshoots; especially Holland, which, since the Middle Ages, has been in every respect the most advanced portion of Germany. Secondly, Great Britain, with which may be classed the United States, notwithstanding their present attitude of rivalry. The second pair is exclusively Catholic. It consists of the great Italian nationality, which in spite of political divisions has always maintained its distinct character; and of the population of the Spanish peninsula, (for Portugal, sociologically considered, is not to be separated from Spain,) which has so largely increased the Western family by its colonies. To complete the conception of this group of advanced nations, we must add two accessory members, Greece and Poland, countries which, though situated in Eastern Europe, are connected with the West, the one by ancient history, the other by modern. Besides these, there are various intermediate nationalities which I need not now enumerate, connecting or demarcating the more important branches of the family.

In this vast Republic it is that the new philosophy is to find its sphere of intellectual and moral action; the object being so to modify the initiative of the central nation by the reacting influences of the other four, as to give increased efficiency to the general movement. It is a task eminently calculated to test the social capabilities of Positivism, and for which no other system is qualified. The Metaphysical spirit is as unfit for it as the theological. The disruption of the mediæval system is due to the decadence of theology; but the direct agency in the rupture was the solvent force of the metaphysical spirit. Neither, therefore, is likely to recombine elements the separation of which is principally due to their own conceptions. It is entirely to the spontaneous action of the Positive spirit that we owe those new though insufficient links

of union, whether industrial, artistic, or scientific, which, since the close of the Middle Ages, have been leading us more and more decidedly to a reconstruction of the Western alliance. And now that Positivism has assumed its matured and systematic form, its competence for the work is even more unquestionable. It alone can effectually remove the national antipathies which still exist. But it will do this without impairing the natural qualities of any of them; its object being by a wise combination of these qualities, to develop under a new form the feeling of a common Occidentality.

Relation of Positivism to the mediæval system, to which we owe the first attempt to separate spiritual from temporal power.

By extending the social movement to its proper limits, we thus exhibit on a larger scale the same features that were noticed when France alone was being considered. Abroad or at home, every great social problem that arises proves that the object of the second revolutionary phase is a reorganisation of principles and of life. By this means a body of public opinion will be formed of sufficient force to lead gradually to the growth of new political institutions adapted to the special requirements of each nation, under the general superintendence of the spiritual power, from whom our fundamental principles have proceeded. The general spirit of these principles is essentially historical, whereas the tendency of the negative phase of the revolution was anti-historical. Without blind hatred of the past, men would never have had sufficient energy to abandon the old system. But henceforth the best evidence of having attained complete emancipation will be the rendering full justice to the past in all its phases. This is the most characteristic feature of that relative spirit which distinguishes Positivism. The surest sign of superiority, whether in persons or systems, is fair appreciation of opponents. And this must always be the tendency of social science when rightly understood, since its prevision of the future is avowedly based upon systematic examination of the past. It is the only way in which the free and yet universal adoption of general principles of social reconstruction can ever be possible. Such reconstruction, viewed by the light of Sociology, will be regarded as a necessary link in the series of human development; and thus many confused and incoherent notions suggested by the arbitrary beliefs hitherto prevalent will finally disappear. The growth of public opinion in this respect is aided by the increasing strength of social feeling. Both combine to encourage the historical spirit which dis-

tinguishes the second period of the Revolution, as we see indicated already in so many of the popular sympathies of the day.

Acting on this principle, Positivists will always acknowledge the close relation between their own system and the memorable effort of mediæval Catholicism. In offering for the acceptance of Humanity a new organisation of life, we would not dissociate it with all that is gone before. On the contrary, it is our boast that we are but proposing for her maturity the accomplishment of the noble effort of her youth, made under intellectual and social conditions which precluded the possibility of success. We are too full of the future to fear any serious charge of retrogression towards the past; and such a charge would come strangely from those of our opponents whose political ideal is that amalgamation of temporal and spiritual power which was adopted by the theocratic or military systems of antiquity.

The separation of these powers in the Middle Ages is the greatest advance ever yet made in the theory of social Order. It was imperfectly effected, because the time was not ripe for it; but enough was done to show the object of the separation, and some of its principal results were partially arrived at. It originated the fundamental doctrine of modern social life, the subordination of Politics to Morals; a doctrine which in spite of the most obstinate resistance has survived the decline of the religion which first proclaimed it. We see it now sanctioned by a republican government which has shaken off the fetters of that religion more completely than any other. A further result of the separation is the keen sense of personal honour, combined with general fraternity, which distinguishes Western nations, especially those who have been preserved from Protestantism To the same source is due the general feeling that men should be judged by their intellectual and moral worth, irrespectively of social position, yet without upsetting that subordination of classes which is rendered necessary by the requirements of practical life. And this has accustomed all classes to free discussion of moral and even of political questions; since every one feels it a right and a duty to judge actions and persons by the general principles which a common system of education has inculcated alike on all. I need not enlarge on the value of the mediæval church in organising the political system of Western Europe, in which there was no other recognised principle of union. All these social results are usually attributed to the

excellence of the Christian doctrine; but history when fairly examined shows that the source from which they are principally derived is the Catholic principle of separating the two powers. For these effects are nowhere visible except in the countries where this separation has been effected, although a similar code of morals and indeed a faith identically the same has been received elsewhere. Besides, although sanctioned by the general tone of modern life, they have been neutralised to a considerable extent by the decline of the Catholic organisation, and this especially in the countries where the greatest efforts have been made to restore the doctrine to its original purity and power.

In these respects Positivism has already appreciated Catholicism more adequately than any of its own defenders, not even excepting De Maistre himself, as indeed some of the more candid organs of the retrograde school have allowed. But the merit of Catholicism does not merely depend on the magnitude of the task allotted to it in the long series of human development. What adds to the glory of its efforts is that, as history clearly proves, they were in advance of their time. The political failure of Catholicism resulted from the imperfection of its doctrines, and the resistance of the social medium in which it worked. It is true that Monotheism is far more compatible with the separation of powers than Polytheism. But from the absolute character of every kind of theology, there was always a tendency in the mediæval system to degenerate into mere theocracy. In fact, the proximate cause of its decline was the increased development of this tendency in the fourteenth century, and the resistance which it provoked among the kings, who stood forward to represent the general voice of condemnation. Again, though separation of powers was less difficult in the defensive system of mediæval warfare than in the aggressive system of antiquity, yet it is thoroughly repugnant to the military spirit in all its phases, because adverse to the concentration of authority which is requisite in war. And thus it was never thoroughly realised, except in the conceptions of a few leading men among both the spiritual and the temporal class. Its brief success was principally caused by a temporary combination of circumstances. It was for the most part a condition of very unstable equilibrium, oscillating between theocracy and imperialism.

But Positive civilisation will accomplish what in the Middle Ages could only be attempted. We are aided, not merely by the example of the Middle Ages, but by the preparatory labours of the last five centuries. New modes of thought have arisen, and practical life has assumed new phases; and all are alike tending towards the separation of powers. What in the Middle Ages was but dimly foreseen by a few ardent and aspiring minds, becomes now an inevitable and obvious result, instinctively felt and formally recognised by all. From the intellectual point of view, it is nothing more than the distinction between theory and practice; a distinction which is already admitted more or less formally throughout civilised Europe in subjects of less importance: which therefore it would be unreasonable to abandon in the most difficult of all arts and sciences. Viewed socially, it implies the separation of education from action; or of morals from politics; and few would deny that the maintenance of this separation is one of the greatest blessings of our progressive civilisation. The distinction is of equal importance to morality and to liberty. It is the only way of bringing opinion and conduct under the control of principle: for the most obvious application of a principle has little weight when it is merely an act of obedience to a special command. Taking the more general question of bringing our political forces into harmony, it seems clear that theoretical and practical power are so totally distinct in origin and operation, whether in relation to the heart, intellect, or character, that the functions of counsel and of command ought never to belong to the same organs. All attempts to unite them are at once retrograde and visionary, and if successful would lead to the intolerable government of mediocrities equally unfit for either kind of power. But as I shall show in the following chapters, this principle of separation will soon find increasing support among women and the working classes; the two elements of society in which we find the greatest amount of good sense and right feeling.

But the mediæval attempt was premature; and Positivism will renew and complete it.

Modern society is, in fact, already ripe for the adoption of this fundamental principle of polity; and the opposition to it proceeds almost entirely from its connection with doctrines of the mediæval church which have now become deservedly obsolete. But there will be an end of these revolutionary prejudices among all impartial observers as soon as the principle is seen embodied in Positivism, the only doctrine which is wholly dis-

connected with Theology. All human conceptions, all social improvements originated under theological influence, as we see proved clearly in many of the humblest details of life. But this has never prevented Humanity from finally appropriating to herself the results of the creeds which she has outgrown. And so it will be with this great political principle; it has already become obsolete except for the Positive school, which has verified inductively all the minor truths implied in it. The only direct attacks against it come from the metaphysicians, whose ambitious aspirations for absolute authority would be thwarted by it. It is they who attempt to fasten on Positivism the stigma of theocracy: a strange and in most cases disingenuous reproach, seeing that Positivists are distinguished from their opponents by discarding all beliefs which supersede the necessity for discussion. The fact is that serious disturbances will soon be caused by the pertinacious efforts of these adherents of pedantocracy to regulate by law what ought to be left to moral influences; and then the public will become more alive to the necessity of the Positivist doctrine of systematically separating political from moral government. The latter should be understood to rely exclusively on the forces of conviction and persuasion; its influence on action being simply that of counsel; whereas the former employs direct compulsion, based upon superiority of physical force.

We now understand what is meant by the constructive character of the second revolutionary phase. It implies a union of the social aspirations of the Middle Ages with the wise political instincts of the Convention. In the interval of these two periods the more advanced nations were without any systematic organisation, and were abandoned to the twofold process of transition, which was decomposing the old order and preparing the new. Both these preliminary steps are now sufficiently accomplished. The desire for social regeneration has become too strong to be resisted, and a philosophical system capable of directing it has already arisen. The task, therefore, that lies now before us is to recommence on a better intellectual and social basis the great effort of Catholicism, namely, to bring Western Europe to a social system of peaceful activity and intellectual culture, in which Thought and Action should be subordinated to universal Love. Reconstruction will begin at

the points where demolition began previously. The dissolution of the old organism began in the fourteenth century by the destruction of its international character. Conversely, reorganisation begins by satisfying the intellectual and moral wants common to the five Western nations.

The Ethical system of Positivism.

And here, since the object of this chapter is to explain the social value of Positivism, I may show briefly that it leads necessarily to the formation of a definite system of universal Morality; this being the ultimate object of all Philosophy, and the starting-point of all Polity. Since it is by its moral code that every spiritual power must be principally tested, this will be the best mode of judging of the relative merits of Positivism and Catholicism.

Subjection of Self-love to Social love is the great ethical problem. The Social state of itself favours this result; but it may be hastened by organised and conscious effort.

To the Positivist the object of Morals is to make our sympathetic instincts preponderate as far as possible over the selfish instincts; social feelings over personal feelings. This way of viewing the subject is peculiar to the new philosophy, for no other system has included the more recent additions to the theory of human nature, of which Catholicism gave so imperfect a representation.

It is one of the first principles of Biology that organic life always preponderates over animal life. By this principle the Sociologist explains the superior strength of the self-regarding instincts, which are all connected more or less closely with the instinct of self-preservation. But although there is no evading this fact, Sociology shows that it is compatible with the existence of benevolent affections; affections which Catholicism had asserted to be altogether alien to our nature, and to be entirely dependent on superhuman Grace derived from a sphere beyond the reach of Law. The great problem, then, is to raise social feeling by artificial effort to the position which, in the natural condition, is held by selfish feeling. The solution is to be found in another biological principle, namely, that functions and organs are developed by constant exercise, and atrophied by prolonged inaction. Now the effect of the Social state is, that while our sympathetic instincts are constantly stimulated, the selfish propensities are restricted; since, if free play were given to them, human intercourse would very shortly become impossible. Thus it compensates to some extent the natural weakness of the Sympathies that they are capable of almost

indefinite extension, whilst Self-love meets inevitably with a more or less efficient check. Both these tendencies naturally increase with the progress of Humanity, and their increase is the best measure of the degree of perfection that we have attained. Their growth, though spontaneous, may be materially hastened by the organised intervention both of individuals and of society, the object being to increase all favourable influences and diminish the unfavourable. This is the object of the art of Morals. Like every other art, it is restricted within certain limits. But in this case the limits are less narrow, because the phenomena, being more complex, are also more modifiable.

Positive morality differs therefore from that of theological as well as of metaphysical systems. Its primary principle is the preponderance of Social Sympathy. Full and free expansion of the benevolent emotions is made the first condition of individual and social well-being, since these emotions are at once the sweetest to experience, and are the only feelings which can find expression simultaneously in all. The doctrine is as deep and pure as it is simple and true. It is eminently characteristic of a philosophy which, by virtue of its attribute of reality, subordinates all scientific conceptions to the social point of view, as the sole point from which they can be co-ordinated into a whole. The intuitive methods of metaphysics could never advance with any consistency beyond the sphere of the individual. Theology, especially Christian theology, could only rise to social conceptions by an indirect process, forced upon it, not by its principles, but by its practical functions. Intrinsically, its spirit was altogether personal; the highest object placed before each individual was the attainment of his own salvation, and all human affections were made subordinate to the love of God. It is true that the first training of our higher feelings is due to theological systems; but their moral value depended mainly on the wisdom of the priesthood. They compensated the defects of their doctrine, and at that time no better doctrine was available, by taking advantage of the antagonism which naturally presented itself between the interests of the imaginary and those of the real world. The moral value of Positivism, on the contrary, is inherent in its doctrine, and can be largely developed independently of any spiritual discipline, though not so far as to dispense with the necessity for such discipline. Thus, while the science of morals is made far more consistent

by being placed in its true connection with the rest of our knowledge, the sphere of natural morality is widened by bringing human life, individually and collectively, under the direct and continuous influence of Social Feeling.

Intermediate between self-love and universal benevolence are the domestic affections: filial, fraternal, conjugal, paternal.

I have stated that Positive morality is brought into a coherent and systematic form by its principle of universal love. This principle must now be examined first in its application to the separate aspects of the subject, and subsequently as the means by which the various parts may be co-ordinated.

There are three successive states of morality answering to the three principal stages of human life; the personal, the domestic, and the social stage. The succession represents the gradual training of the sympathetic principle; it is drawn out step by step by a series of affections which, as it diminishes in intensity, increases in dignity. This series forms our best resource in attempting as far as possible to reach the normal state; subordination of self-love to social feeling. These are the two extremes in the scale of human affections; but between them there is an intermediate degree, namely, domestic attachment, and it is on this that the solution of the great moral problem depends. The love of his family leads Man out of his original state of Self-love and enables him to attain finally a sufficient measure of Social love. Every attempt on the part of the moral educator to call this last into immediate action, regardless of the intermediate stage, is to be condemned as utterly chimerical and profoundly injurious. Such attempts are regarded in the present day with far too favourable an eye. Far from being a sign of social progress, they would, if successful, be an immense step backwards; the feeling which inspires them being one of perverted admiration for antiquity.

Since the importance of domestic life is so great as a transition from selfish to social feeling, a systematic view of its relations will be the best mode of explaining the spirit of Positive morality, which is in every respect based upon the order found in nature.

The first germ of social feeling is seen in the affection of the child for its parents. Filial love is the starting-point of our moral education: from it springs the instinct of Continuity, and consequently of reverence for our ancestors. It is the first tie by which the new being feels himself bound to the whole past history of Man. Brotherly love comes next, implanting

the instinct of Solidarity, that is to say of union with our contemporaries; and thus we have already a sort of outline of social existence. With maturity new phases of feeling are developed. Relationships are formed of an entirely voluntary nature; which have therefore a still more social character than the involuntary ties of earlier years. This second stage in moral education begins with conjugal affection, the most important of all, in which perfect fullness of devotion is secured by the reciprocity and indissolubility of the bond. It is the highest type of all sympathetic instincts, and has appropriated to itself in a special sense the name of Love. From this most perfect of unions proceeds the last in the series of domestic sympathies, parental love. It completes the training by which Nature prepares us for universal sympathy: for it teaches us to care for our successors; and thus it binds us to the Future, as filial love had bound us to the Past.

I placed the voluntary class of domestic sympathies after the involuntary, because it was the natural order of individual development, and it thus bore out my statement of the necessity of family life as an intermediate stage between personal and social life. But in treating more directly of the theory of the Family as the constituent element of the body politic, the inverse order should be followed. In that case conjugal attachment would come first, as being the feeling through which the family comes into existence as a new social unit, which in many cases consists simply of the original pair. Domestic sympathy, when once formed by marriage, is perpetuated first by parental then by filial affection; it may afterwards be developed by the tie of brotherhood, the only relation by which different families can be brought into direct contact. The order followed here is that of decrease in intensity, and increase in extension. The feeling of fraternity, which I place last, because it is usually least powerful, will be seen to be of primary importance when regarded as the transition from domestic to social affections; it is, indeed, the natural type to which all social sympathies conform. But there is yet another intermediate relation, without which this brief exposition of the theory of the family would be incomplete; I mean the relation of household servitude, which may be called indifferently domestic or social. It is a relation which at the present time is not properly appreciated on account of our dislike to all subjection; and yet the word *domestic* is enough to

remind us that in every normal state of Humanity it supplies what would otherwise be a want in household relations. Its value lies in completing the education of the social instinct by a special apprenticeship in obedience and command; both being subordinated to the universal principle of mutual sympathy.

The object of the preceding remarks was to show rapidly the efficacy of the Positive method in moral questions by applying it to the most important of all moral theories, the theory of the family. Fuller treatment of the subject will be presented in subsequent portions of this work. I would call attention, however, to the beneficial influence of Positivism on personal morality. Actions which hitherto had always been referred even by Catholic philosophers to personal interests, are now brought under the great principle of Love on which the whole Positive doctrine is based.

Personal virtues placed upon a social basis.

Feelings are only to be developed by constant exercise; and exercise is most necessary when the intrinsic energy of the feeling is least. It is therefore quite contrary to the true spirit of moral education to degrade duty in questions of personal morality to a mere calculation of self-interest. Of course in this elementary part of Ethics it is easier to estimate the consequences of actions, and to show the personal utility of the rules enjoined. But this method of procedure inevitably stimulates the self-regarding propensities, which are already too preponderant, and the exercise of which ought as far as possible to be discouraged. Besides, it often results in practical failure. To leave the decision of such questions to the judgment of the individual, is to give a formal sanction to all the natural differences in men's inclinations. When the only motive urged is consideration for personal consequences, everyone feels himself to be the best judge of these, and modifies the rule at his pleasure. Positivism, guided by a truer estimate of the facts, entirely remodels this elementary part of Ethics. Its appeal is to social feeling and not to personal; since the actions in question are of a kind in which the individual is far from being the only person interested. For example, such virtues as temperance and chastity are inculcated by the Positivist on other grounds than those of their personal advantages. He will not of course be blind to their individual value; but this is an aspect on which he will not dwell too much, for fear of concentrating attention on self-interest. At all events, he will

never make it the basis of his precepts, but will invariably rest them upon their social value. There are cases in which men are preserved by an unusually strong constitution from the injurious effects of intemperance or libertinage: but such men are bound to sobriety and continence as rigorously as the rest, because without these virtues they cannot perform their social duties rightly. Even in the commonest of personal virtues, cleanliness, this alteration in the point of view may be made with advantage. A simple sanitary regulation is thus ennobled by knowing that the object of it is to make each one of us more fit for the service of others. In this way, and in no other, can moral education assume its true character at the very outset. We shall become habituated to the feeling of subordination to Humanity, even in our smallest actions. It is in these that we should be trained to gain the mastery over the lower propensities: and the more so that in these simple cases it is less difficult to appreciate their consequences.

The influence of Positivism on personal morality is in itself a proof of its superiority to other systems. Its superiority in domestic morality we have already seen, and yet this was the best aspect of Catholicism, forming indeed the principal basis of its admirable moral code. On social morality strictly so called I need not dwell at length. Here the value of the new philosophy will be more direct and obvious, the fact of its standing at the social point of view being the very feature which distinguishes it from all other systems. In defining the mutual duties arising from the various relations of life, or again in giving solidity and extension to the instinct of our common fraternity, neither theological nor metaphysical morality can bear comparison with Positivism. Its precepts are adapted without difficulty to the special requirements of each case, because they are ever in harmony with the general laws of society and of human nature. But on these obvious characteristics of Positivism I need not farther enlarge, as I shall have other occasions for referring to them.

After this brief exposition of Positive morality I must allude with equal brevity to the means by which it will be established and applied. These are of two kinds. The first lay down the foundations of moral training for each individual; they furnish principles, and they regulate feelings. The second carry out the work begun, and insure the application of the principles

inculcated to practical life. Both these functions are in the first instance performed spontaneously, under the influence of the doctrine and of the sympathies evoked by it. But for their adequate performance a spiritual power specially devoted to the purpose is necessary.

Moral education consists partly of scientific demonstration of ethical truth, but still more of culture of the higher sympathies.

The moral education of the Positivist is based both upon Reason and on Feeling, the latter having always the preponderance, in accordance with the primary principle of the system.

The result of the rational basis is to bring moral precepts to the test of rigorous demonstration, and to secure them against all danger from discussion, by showing that they rest upon the laws of our individual and social nature. By knowing these laws, we are enabled to form a judgment of the influence of each affection, thought, action, or habit, be that influence direct or indirect, special or general, privately or publicly exercised. Convictions based upon such knowledge will be as deep as any that are formed in the present day from the strictest scientific evidence, with that excess of intensity due to their higher importance and their close connection with our noblest feelings. Nor will such convictions be limited to those who are able to appreciate the logical value of the arguments. We see constantly in other departments of Positive science that men will adopt notions upon trust, and carry them out with the same zeal and confidence as if they were thoroughly acquainted with all the grounds for their belief. All that is necessary is that they should feel satisfied that their confidence is well bestowed; the fact being, in spite of all that is said of the rebelliousness of modern thought, that it is often given too readily. The most willing assent is yielded every day to the rules which mathematicians, astronomers, physicists, chemists, or biologists, have laid down in their respective arts, even in cases where the greatest interests are at stake. And similar assent will certainly be accorded to moral rules when they, like the rest, shall be acknowledged to be susceptible of scientific proof.

But while using the force of demonstration to an extent hitherto impossible, Positivists will take care not to exaggerate its importance. Moral education, even in its more systematic parts, should rest principally upon Feeling, as the mere statement of the great human problem indicates. The study of moral questions, intellectually speaking, is most valuable; but the effect it leaves is not directly moral, since the analysis will

refer, not to our own actions, but to those of others; because all scientific investigations, to be impartial and free from confusion, must be objective, not subjective. Now to judge others without immediate reference to self, is a process which may possibly result in strong convictions; but so far from calling out right feelings, it will, if carried too far, interfere with or check their natural development. However, the new school of Moralists is the less likely to err in this direction, that it would be totally inconsistent with that profound knowledge of human nature in which Positivism has already shown itself so far superior to Catholicism. No one knows so well as the Positivist that the principal source of real morality lies in direct exercise of our social sympathies, whether systematic or spontaneous. He will spare no efforts to develope these sympathies from the earliest years by every method which sound philosophy can indicate. It is in this that moral education, whether private or public, principally consists; and to it mental education is always to be held subordinate. I shall revert to these remarks in the next chapter, when I come to the general question of educating the People.

Organisation of Public Opinion.

But however efficient the training received in youth, it will not be enough to regulate our conduct in after years, amidst all the distracting influences of practical life, unless the same spiritual power which provides the education prolong its influence over our maturity. Part of its task will be to recall individuals, classes, and even nations, when the case requires it, to principles which they have forgotten or misinterpreted, and to instruct them in the means of applying them wisely. And here, even more than in the work of education strictly so called, the appeal will be to Feeling rather than to pure Reason. Its force will be derived from Public Opinion strongly organised. If the spiritual power awards its praise and blame justly, public opinion, as I shall show in the next chapter, will lend it the most irresistible support. This moral action of Humanity upon each of her members has always existed whenever there was any real community of principles and feelings. But its strength will be far greater under the Positive system. The reality of the doctrine and the social character of modern civilisation give advantages to the new spiritual power which were denied to Catholicism.

And these advantages are brought forward very prominently

by the Positive system of commemoration. Commemoration, when regularly instituted, is a most valuable instrument in the hands of a spiritual power for continuing the work of moral education. It was the absolute character of Catholicism, even more than the defective state of mediæval society, that caused the failure of its noble aspirations to become the universal religion. In spite of all its efforts, its system of commemoration has always been restricted to very narrow limits, both in time and space. Outside these limits, Catholicism has always shown the same blindness and injustice that it now complains of receiving from its own opponents. Positivism, on the contrary, can yield the full measure of praise to all times and all countries, without either weakness or inconsistency. Possessing the true theory of human development, every mode and phase of that development will be celebrated. Thus every moral precept will be supported by the influence of posterity; and this in private life as well as in public, for the system of commemoration will be applied in the same spirit to the humblest services as well as to the highest.

Commemoration of great men.

While reserving special details for subsequent consideration in this treatise, I may yet give one illustration of this important aspect of Positivism; an illustration which probably will be the first step in the practical application of the system. I would propose to institute in Western Europe on any days that may be thought suitable, the yearly celebration of the three greatest of our predecessors, Cæsar, St. Paul, and Charlemagne, who are respectively the highest types of Greco-Roman civilisation, of Mediæval Feudalism, and of Catholicism which forms the link between the two periods. The services of these illustrious men have never yet been adequately recognised, for want of a sound historical theory enabling us to explain the prominent part which they played in the development of our race. This is true even in the case of St. Paul, notwithstanding the sanctity with which theology has invested him. Positivism gives him a still higher place; for it looks upon him as historically the founder of the religion which bears the inappropriate name of Christianity. In the other two cases the influence of Positive principles is even more necessary. For Cæsar has been almost equally misjudged by theological and by metaphysical writers; and Catholicism has done very little for the proper appreciation of Charlemagne. However, notwithstanding the absence of any

systematic appreciation of these great men, yet from the reverence with which they are generally regarded, we can hardly doubt that the celebration here proposed would meet with ready acceptance throughout Western Europe.

To illustrate my meaning still further, I may observe that history presents cases where exactly the opposite course is called for, and which should be held up not for approbation but for infamy. Blame, it is true, should not be carried to the same extent as praise, because it stimulates the destructive instincts to a degree which is always painful and sometimes injurious. Yet strong condemnation is occasionally desirable. It strengthens social feelings and principles, if only by giving more significance to our approval. Thus, I would suggest that after doing honour to the three great men who have done so much to promote the development of our race, there should be a solemn reprobation of the two principal opponents of progress, Julian and Bonaparte; the latter being the more criminal of the two, the former the more insensate. Their influence has been sufficiently extensive to allow of all the Western nations joining in this damnatory verdict.

The principal function of the spiritual power is to direct the future of society by means of education; and as a supplementary part of education, to pronounce judgment upon the past in the mode here indicated. But there are functions of another kind, relating more immediately to the present; and these too result naturally from its position as an educating body. If the educators are men worthy of their position, it will give them an influence over the whole course of practical life, whether private or public. Of course it will merely be the influence of counsel, and practical men will be free to accept or reject it; but its weight may be very considerable when given prudently, and when the authority from which it proceeds is recognised as competent. The questions on which its advice is most needed are the relations so frequently resulting in hostility between different classes and populations. Its action will be coextensive with the diffusion of Positive principles; for nations professing the same faith, and sharing in the same education, will naturally accept the same intellectual and moral directors. In the next chapter I shall treat this subject more in detail. I merely mention it here as one among the list of functions belonging to the new spiritual power.

The political motto of Positivism: Order and Progress.

It will not now be difficult to show that all the characteristics of Positivism are summed up in its motto, *Order and Progress*, a motto which has a philosophical as well as political bearing, and of which I shall always feel glad to have been the author.

Positivism is the only school which has given a definite significance to these two great conceptions, whether regarded from their scientific or their social aspect. With regard to Progress the assertion will hardly be disputed; no definition of it but the Positive ever having yet been given. In the case of Order it is less apparent; but, as I have shown in the first chapter, it is no less profoundly true. All previous philosophies had regarded Order as stationary, a conception which rendered it wholly inapplicable to modern politics. But Positivism, by rejecting the absolute and yet not introducing the arbitrary, represents Order in a totally new light, and adapts it to our progressive civilisation. It places it on the firmest possible foundation, that is, on the doctrine of the invariability of the laws of nature, which defends it against all danger from subjective chimeras. The Positivist regards artificial Order, in Social phenomena as in all others, as resting necessarily upon the Order of nature, in other words upon the whole series of natural laws.

Progress, the development of Order.

But Order has to be reconciled with Progress: and here Positivism is still more obviously without a rival. Necessary as the reconciliation is, no other system has even attempted it. But the facility with which we are now enabled, by the encyclopædic scale, to pass from the simplest mathematical phenomena to the most complicated phenomena of political life, leads at once to a solution of the problem. Viewed scientifically, it is an instance of that necessary correlation of existence and movement which we find indicated in the inorganic world, and which becomes still more distinct in Biology. Finding it in all the lower sciences, we are prepared for its appearance in a still more definite shape in Sociology. Here its practical importance becomes more obvious, though it had been implicitly involved before. In Sociology the correlation assumes this form: Order is the condition of all Progress; Progress is always the object of Order. Or, to penetrate the question still more deeply, Progress may be regarded simply as the development of Order; for the order of nature necessarily contains within itself the germ of all

possible progress. The rational view of human affairs is to look on all their changes, not as new Creations, but as new Evolutions. And we find this principle fully borne out in history. Every social innovation has its roots in the past; and the rudest phases of savage life show the primitive trace of all subsequent improvement.

Analysis of Progress: material, physical, intellectual, and moral.

Progress then is in its essence identical with Order, and may be looked upon as Order made manifest. Therefore, in explaining this double conception on which the Science and Art of society depend, we may at present limit ourselves to the analysis of Progress. Thus simplified it is more easy to grasp, especially now that the novelty and importance of the question of Progress are attracting so much attention. For the public is becoming instinctively alive to its real significance, as the basis on which all sound moral and political teaching must henceforth rest.

Taking then this point of view, we may say that the one great object of life, personal or social, is to become more perfect in every way; in our external condition first, but also and more especially in our own nature. The first kind of progress we share in common with the higher animals; all of which make some efforts to improve their material position. It is of course the least elevated stage of progress, but being the easiest it is the point from which we start towards the higher stages. A nation that has made no efforts to improve itself materially, will take but little interest in moral or mental improvement. This is the only ground on which enlightened men can feel much pleasure in the material progress of our own times. It stirs up influences that tend to the nobler kinds of progress; influences which would meet with even greater opposition than they do, were not the temptations presented to the coarser natures by material prosperity so irresistible. Owing to the mental and moral anarchy in which we live, systematic efforts to gain the higher degrees of progress have been as yet impossible; and this explains, though it does not justify, the exaggerated importance attributed nowadays to material improvements. But the only kinds of improvement really characteristic of Humanity are those which concern our own nature; and even here we are not quite alone; for several of the higher animals show some slight tendencies to improve themselves physically.

Progress in the higher sense includes improvements of three

sorts: that is to say, it may be Physical, Intellectual, or Moral progress: the difficulty of each class being in proportion to its value and the extent of its sphere. Physical progress, which again might be divided on the same principle, seems under some of its aspects almost the same thing as material. But regarded as a whole it is far more important and far more difficult: its influence on the well-being of Man is also much greater. We gain more, for instance, by the smallest addition to the length of life, or by any increased security for health, than by the most elaborate improvements in our modes of travelling by land or water, in which birds will always have a great advantage over us. However, as I said before, physical progress is not exclusively confined to Man. Some of the animals, for instance, advance as far as cleanliness, which is the first step in the progressive scale.

Intellectual and Moral progress, then, is the only kind really distinctive of our race. Individual animals sometimes show it, but never a whole species, except as a consequence of prolonged intervention on the part of Man. Between these two highest grades, as between the two lower, we shall find a difference of value, extent, and difficulty; always supposing the standard to be the manner in which they affect Man's well-being, collectively or individually. To strengthen the intellectual powers, whether for art or for science, whether it be the powers of observation or those of induction and deduction, is, when circumstances allow of their being made available for social purposes, of greater and more extensive importance, than all physical, and *a fortiori* than all material improvements. But we know from the fundamental principle laid down in the first chapter of this work, that moral progress has even more to do with our well-being than intellectual progress. The moral faculties are more modifiable, although the effort required to modify them is greater. A real increase, for instance, in benevolence or courage would bring more happiness than any addition to our intellectual powers. Therefore, to the question, What is the true object of human life, whether looked at collectively or individually? the simplest and most precise answer would be, the perfection of our moral nature; since it has a more immediate and certain influence on our well-being than perfection of any other kind. All the other kinds are necessary, if for no other reason than to prepare the way for this: but from the very fact of this con-

nection, it may be regarded as their representative; since it involves them all implicitly and stimulates them to increased activity. Keeping then to the question of moral perfection, we find two qualities standing above the rest in practical importance, namely, Sympathy and Energy. Both these qualities are included in the word *Heart*, which in all European languages has a different meaning for the two sexes. Both will be developed by Positivism, more directly, more continuously, and with greater result, than under any former system. The whole tendency of Positivism is to encourage sympathy; since it subordinates every thought, desire, and action to social feeling. Energy is also presupposed, and at the same time fostered, by a system which removes a heavy weight of superstition, reveals the true dignity of man, and supplies an unceasing motive for individual and collective action. The very acceptance of Positivism demands some vigour of character; it implies the braving of spiritual terrors which were once enough to intimidate the firmest minds.

Progress, then, may be regarded under four successive aspects: Material, Physical, Intellectual, and Moral. Each of these might again be divided on the same principle, and we should then discover several intermediate phases. These cannot be investigated here; and I have only to note that the philosophical principle of this analysis is precisely the same as that on which I have based the Classification of the Sciences. In both cases the order followed is that of increasing generality and complexity in the phenomena. The only difference is in the mode in which the two arrangements are developed. For scientific purposes the lower portion of the scale has to be expanded into greater detail; while from the social point of view attention is concentrated on the higher parts. But whether it be the scale of the True or that of the Good, the conclusion is the same in both. Both alike indicate the supremacy of social considerations; both point to universal Love as the highest ideal.

I have now explained the principal purpose of Positive Philosophy, namely, spiritual reorganisation; and I have shown how that purpose is involved in the Positivist motto, Order and Progress. Positivism, then, realises the highest aspirations of mediæval Catholicism, and at the same time fulfils those conditions the absence of which caused the failure of the Convention. It combines the opposite merits of the Catholic and the

Revolutionary spirit, and by so doing supersedes them both. Theology and Metaphysics may now disappear without danger, because the service which each of them rendered is now harmonised with that of the other, and will be performed more perfectly. The principle on which this result depends is the separation of spiritual from temporal power. This, it will be remembered, had always been the chief subject of contention between the two antagonistic parties.

Application of our principles to actual politics. All government must for the present be provisional.

I have spoken of the moral and mental reorganisation of Western Europe as characterising the second phase of the Revolution. Let us now see what are its relations with the present state of politics. Of course the development of Positivism will not be much affected by the retrograde tendencies of the day, whether theological or metaphysical. Still the general course of events will exercise an influence upon it, of which it is important to take account. So too, although the new doctrine cannot at present do much to modify its surroundings, there are yet certain points in which action may be taken at once. In the fourth volume of this treatise the question of a transitional policy will be carefully considered, with the view of facilitating the advent of the normal state which social science indicates in a more distant future. I cannot complete this chapter without some notice of such a policy, which must be carried on until Positivism has made its way to general acceptance.

The principal feature of this policy is that it is temporary. To set up any permanent institution in a society which has no fixed opinions or principles of life, would be hopeless. Until the most important questions are thoroughly settled, both in principle and practice, the only measures of the least utility are those which facilitate the process of reconstruction. Measures adopted with a view to permanence must end, as we have seen them end so often, in disappointment and failure, however enthusiastically they may have been received at first.

Inevitable as this consequence of our revolutionary position is, it has never been understood, except by the great leaders of the republican movement in 1793. Of the various governments that we have had during the last two generations, all except the Convention have fallen into the vain delusion of attempting to found permanent institutions, without waiting for any intellectual or moral basis. And therefore it is that

none but the Convention has left any deep traces in men's thoughts or feelings. All its principal measures, even those which concerned the future more than the present, were avowedly provisional; and the consequence was that they harmonised well with the peculiar circumstances of the time. The true philosopher will always look with respectful admiration on these men, who not only had no rational theory to guide them, but were encumbered with false metaphysical notions; and who yet notwithstanding proved themselves the only real statesmen that Western Europe can boast of since the death of Frederick the Great. Indeed the wisdom of their policy would be almost unaccountable, only that the very circumstances which called for it so urgently were to some extent calculated to suggest it. The state of things was such as to make it impossible to settle the government on any permanent basis. Again, amidst all the wild extravagance of the principles in vogue, the necessity of a strong government to resist reactionary invasion counteracted many of their worst effects. On the removal of this salutary pressure, the Convention fell into the common error, though to a less extent than the Constituent Assembly. It set up a constitution framed according to some abstract model, which was supposed to be final, but which did not last so long as the period originally proposed for its own provisional labours. It is on this first period of its government that its fame rests.

The plan originally proposed was that the government of the Convention should last till the end of the war. If this plan could have been carried out, it would probably have been extended still further, as the impossibility of establishing any permanent system would have been generally recognised. The only avowed motive for making the government provisional was of course the urgent necessity of national defence. But beneath this temporary motive, which for the time superseded every other consideration, there was another and a deeper reason for it, which could not have been understood without sounder historical principles than were at that time possible. That motive was the utterly negative character of the metaphysical doctrines then accepted, and the consequent absence of any intellectual or moral basis for political reconstruction. This of course was not recognised, but it was really the principal reason why the establishment of any definite system of government was delayed. Had the war been brought to an end,

clearer views of the subject would no doubt have been formed; indeed they had been formed already in the opposite camp, by men of the Neo-catholic school, who were not absorbed by the urgent question of defending the Republic. What blinded men to the truth was the fundamental yet inevitable error of supposing the critical doctrines of the preceding generation applicable to purposes of construction. They were undeceived at last by the utter anarchy which the triumph of these principles occasioned; and the next generation occupied itself with the counter-revolutionary movement, in which similar attempts at finality were made by the various reactionist parties. These parties were quite as destitute as their opponents of any principles suited to the task of reconstruction; and they had to fall back upon the old system as the only recognised basis on which public Order could be maintained.

Danger of attempting political reconstruction before spiritual.

And in this respect the situation is still unchanged. It still retains its revolutionary character; and any immediate attempt to reorganise political administration would only be the signal for fresh attempts at reaction, attempts which now can have no other result than anarchy. It is true that Positivism has just supplied us with a philosophical basis for political reconstruction. But its principles are still so new and undeveloped, and besides are understood by so few, that they cannot exercise much influence at present on political life. Ultimately, and by slow degrees, they will mould the institutions of the future, but meanwhile they must work their way freely into men's minds and hearts, and for this at least one generation will be necessary. Spiritual organisation is the only point where an immediate beginning can be made; difficult as it is, its possibility is at last as certain as its urgency. When sufficient progress has been made with it, it will cause a gradual regeneration of political institutions. But any attempt to modify these too rapidly would only result in fresh disturbances. Such disturbances it is true will never be as dangerous as they were formerly, because the anarchy of opinion is so profound that it is far more difficult for men to agree in any fixed principles of action. The absolute doctrines of the last century which inspired such intense conviction, can never regain their strength; because, when brought to the crucial test of experience as well as of discussion, their uselessness for constructive purposes and their subversive tendency become evident to everyone. They have

been weakened too by theological concessions, which their supporters, in order to carry on the government at all, were obliged to make. Consequently the policy with which they are at present connected is one which oscillates between reaction and anarchy, or rather which is at once despotic and destructive, from the necessity of controlling a society which has become almost as adverse to metaphysical as to theological rule. In the utter absence then of any general convictions, the worst forms of political commotion are not to be feared, because it would be impossible to rouse men's passions sufficiently. But unwise efforts to set up a permanent system of government would even now lead in certain cases to lamentable disorder, and would at all events be utterly useless. Quiet at home depends now, like peace abroad, simply on the absence of disturbing forces; a most insecure basis, since it is itself a symptom of the extent to which the disorganising movement has proceeded. This singular condition must necessarily continue until the *interregnum* which at present exists in the moral and intellectual region comes to an end. As long as there is such an utter want of harmony in feeling as well as in opinion, there can be no real security against war or internal disorder. The existing equilibrium has arisen so spontaneously that it is no doubt less unstable than is generally supposed. Still it is sufficiently precarious to excite continual panics both at home and abroad, which are not only very irritating, but often exercise a most injurious influence over our policy. Now attempts at immediate reconstruction of political institutions, instead of improving this state of things, make it very much worse, by giving factitious life to the old doctrines which, being thoroughly worn out, ought to be left to the natural process of decay. The inevitable result of restoring them to official authority will be to deter the public, and even the thinking portion of it, from that free exercise of the mental powers by which, and by which only, we may hope to arrive without disturbance at fixed principles of action.

The cessation of war therefore justifies no change in republican policy. As long as the spiritual interregnum lasts, it must retain its provisional character. Indeed this character ought to be more strongly impressed upon it than ever. For no one now has any real belief in the organic value of the received metaphysical doctrines. They would never have been

revived but for the need of having some sort of political formula to work with, in default of any real social convictions. But the revival is only apparent, and it contrasts most strikingly with the utter absence of systematic principles in most active minds. There is no real danger of repeating the error of the first revolutionists and of attempting to construct with negative doctrines. We have only to consider the vast development of industry, of esthetic culture, and of scientific study, things incompatible with any regard for the metaphysical teaching of ideologists or psychologists, to free ourselves from all anxiety on this head. Nor is there much to fear in the natural enthusiasm which is carrying us back to the first days of the Revolution. It will only revive the old republican spirit, and make us forget the long period of retrogression and stagnation which have elapsed since the first great outbreak; for this is the point on which the attention of posterity will be finally concentrated. But while satisfying these very legitimate feelings, the people will soon find that the only aspect of this great crisis which we have to imitate is the wise insight of the Convention during the first part of its administration, in perceiving that their policy could only be provisional, and that definite reconstruction must be reserved for better times. We may fairly hope that the next formal attempt to set up a constitution according to some abstract ideal, will convince the French nation, and ultimately the whole West, of the utter futility of such schemes. Besides, the free discussion which has become habitual to us, and the temper of the people which is as sceptical of political entities as of Christian mysteries, would be very unfavourable to these last efforts of an expiring metaphysical philosophy. Never was there a time so unpropitious for doctrines admitting of no real demonstration; demonstration being now the only possible basis of permanent belief. Supposing then a new constitution to be set on foot, and the usual time to be spent in the process of elaborating it, public opinion will very possibly discard it before it is conpleted; not allowing it even the short average duration of former constitutions. Any attempt to check free discussion on the subject would but result in securing fresh guarantees for this natural consequence of our intellectual and social position.

Politically what is wanted is

The same conditions which require our policy to be provisional while the spiritual interregnum lasts, point also to the

Dictatorship, with liberty of speech and discussion.

mode in which this provisional policy should be carried out. Had the revolutionary government of the Convention continued till the end of the war, it would probably have been prolonged up to the present time. But in one most important respect a modification would have been necessary. During the struggle for independence what was wanted was a vigorous dictatorship, combining spiritual with temporal powers; a dictatorship even stronger than the old monarchy, and only distinguished from despotism by its ardour in the cause of progress. Without complete concentration of political power, the republic could never have been saved. But with peace the necessity for such concentration was at an end. The only motive for still continuing the provisional system was the absence of social convictions. But this would also be a motive for giving perfect liberty of speech and discussion, which till then had been impossible or dangerous. For liberty was a necessary condition for elaborating and diffusing a new system of universal principles, as the only sure basis for the future regeneration of society.

This hypothetical view of changes which might have taken place in the Conventional government, may be applied to the existing condition of affairs. It is the policy best adapted for the republican government which is now arising in all the security of a settled peace, and yet amidst the most entire anarchy of opinion. The successors of the Convention, men unworthy of their task, degraded the progressive dictatorship entrusted to them by the circumstances of the time into a retrograde tyranny. During the reign of Charles X., which was the last phase of the reaction, the central power was thoroughly undermined by the legal opposition of the parliamentary or local power. The central government still refused to recognise any limits to its authority; but the growth of free thought made its claims to spiritual jurisdiction more and more untenable, leaving it merely the temporal authority requisite for public order. During the neutral period which followed the counter-revolution, the dictatorship was not merely restricted to its proper functions, but was legally destroyed; that is, the local power as represented by parliament took the place of the central power. All pretensions to spiritual influence were abandoned by both; their thoughts being sufficiently occupied with the maintenance of material order.

The intellectual anarchy of the time made this task difficult enough; but they aggravated the difficulty by unprincipled attempts to establish their government on the basis of pure self-interest, irrespectively of all moral considerations. The restoration of the republic and the progressive spirit aroused by it has no doubt given to both legislative and executive a large increase of power; to an extent indeed which a few years back would have caused violent antipathy. But it would be a grievous error for either of them to attempt to imitate the dictatorial style of the Conventional government. Unsuccessful in any true sense as the attempt would be, it might occasion very serious disturbances, which like the obsolete metaphysical principles in which they originate, would be equally dangerous to Order and to Progress.

We see then that in the total absence of any fixed principles on which men can unite, the policy required is one which shall be purely provisional, and limited almost entirely to the maintenance of material order. If order be preserved, the situation is in all other respects most favourable to the work of mental and moral regeneration which will prepare the way for the society of the future. The establishment of a republic in France disproves the false claims set up by official writers in behalf of constitutional government, as if it was the final issue of the Revolution. Meantime there is nothing irrevocable in this republic, except the moral principle involved in it, the absolute and permanent preponderance of Social Feeling; in other words, the concentration of all the powers of Man upon the common welfare. This is the only maxim of the day which we can accept as final. It needs no formal sanction, because it is merely the expression of feelings generally avowed, all prejudices against it having been entirely swept away. But with the doctrines and the institutions resulting from them, through which this dominion of social feeling is to become an organised reality, the republic has no direct connection; it would be compatible with many different solutions of the problem. Politically, the only irrevocable point is the abolition of monarchy, which for a long time has been in France and to a less extent throughout the West, the symbol of retrogression.

That spirit of devotion to the public welfare, which is the noblest feature of republicanism, is strongly opposed to any

immediate attempts at political finality, as being incompatible with conscientious endeavours to find a real solution of social problems. For before the practical solution can be hoped for, a systematic basis for it must exist; and this we can hardly expect to find in the remnants left to us of the old creeds. All that the true philosopher desires is simply that the question of moral and intellectual reorganisation shall be left to the unrestricted efforts of thinkers of whatever school. And in advocating this cause, he will plead the interests of the republic, for the safety of which it is of the utmost importance that no special set of principles should be placed under official patronage. Republicanism then will do far more to protect free thought, and resist political encroachment, than was done during the Orleanist government by the retrograde instincts of Catholicism. Catholic resistance to political reconstructions was strong, but blind; its place will now be more than supplied by wise indifference on the part of the public, which has learnt by experience the inevitable failure of these incoherent attempts to realise metaphysical Utopias. The only danger of the position is lest it divert the public, even the more reflective portion of it, from deep and continuous thought to practical experiments based on superficial and hasty considerations. It must be owned that the temper of mind which now prevails would have been most unfavourable for the original elaboration of Positivism. That work, however, had already been accomplished under the Constitutional system; which, while not so restrictive as the preceding government, was yet sufficiently so to concentrate our intellectual powers, which of themselves would have been too feeble, upon the task. The original conception had indeed been formed during the preceding reign; but its development and diffusion took place under the parliamentary system. Positivism now offers itself for practical application to the question of social progress, which has become again the prominent question, and will ever remain so. Unfavourable as the present political temper would have been to the rise of Positivism, it is not at all so to its diffusion; always supposing its teachers to be men of sufficient dignity to avoid the snare of political ambition into which thinkers are now so apt to fall. By explaining, as it alone can explain, the futility and danger of the various Utopian schemes which are now competing with each other for the reorganisation of society,

Positivism will soon be able to divert public attention from these political chimeras, to the question of a total reformation of principles and of life.

Republicanism, then, will offer no obstacle to the diffusion of Positivist principles. Indeed, there is one point of view from which we may regard it as the commencement of the normal state. It will gradually lead to the recognition of the fundamental principle that spiritual power must be wholly independent of every kind of temporal power, whether central or local. It is not merely that statesmen will soon have to confess their inability to decide on the merits of a doctrine which supposes an amount of deep scientific knowledge from which they must necessarily be precluded. Besides this, the disturbance caused by the ambition of metaphysical schemers, who are incapable of understanding the times in which they live, will induce the public to withdraw their confidence from such men, and give it only to those who are content to abandon all political prospects and to devote themselves to their proper function as philosophers. Thus Republicanism will prove increasingly favourable to this great principle of Positivism, the separation of temporal from spiritual power, notwithstanding the temptations offered to men who wish to carry their theories into immediate application. The principle seems, no doubt, in opposition to all our revolutionary prejudices. But the public, as well as the government, will be brought to it by experience. They will find it the only means of saving society from the consequences of metaphysical Utopias, by which Order and Progress are alike threatened. Thinkers too, those of them at least who are sincere, will cease to regard it with such blind antipathy, when they see that while it condemns their aspirations to political influence, it opens out to them a noble and most extensive sphere of moral influence. Independently of social considerations, it is the only way in which the philosopher can maintain the dignity to which his position entitles him, and which is at present so often compromised by the very success of his political ambition.

Such a dictatorship would be a step towards the separation of spiritual and temporal power.

The political attitude which ought for the present to be assumed is so clearly indicated by all the circumstances of the time, that practical instinct has in this respect anticipated theory. The right view is well expressed in the motto, *Liberty and Public Order*, which was adopted spontaneously

The motto of 1830, *Liberty and Public Order*.

by the middle class at the commencement of the neutral period in 1830. It is not known who was the author of it; but it is certainly far too progressive to be considered as representing the feelings of the monarchy. It is not of course the expression of any systematic convictions; but no metaphysical school could have pointed out so clearly the two principal conditions required by the situation. Positivism while accepting it as an inspiration of popular wisdom, makes it more complete by adding two points which should have been contained in it at first, only that they were too much opposed to existing prejudices to have been sanctioned by public opinion. Both parts of the motto require some expansion. Liberty ought to include perfect freedom of teaching; Public Order should involve the preponderance of the central power over the local. I subjoin a few brief remarks on these two points, which will be considered more fully in the fourth volume of this treatise.

Liberty should be extended to Education.

Positivism is now the only consistent advocate of free speech and free enquiry. Schools of opinion which do not rest on demonstration, and would consequently be shaken by any argumentative attacks, can never be sincere in their wish for Liberty, in the extended sense here given to it. Liberty of writing we have now had for a long time. But besides this we want liberty of speech; and also liberty of teaching; that is to say, the abandonment by the State of all its educational monopolies. Freedom of teaching, of which Positivists are the only genuine supporters, has become a condition of the first importance; and this not merely as a provisional measure, but as an indication of the normal state of things. In the first place, it is the only means by which any doctrine that has the power of fixing and harmonising men's convictions can become generally known. To legalise any system of education would imply that such a doctrine had been already found; it most assuredly is not the way to find it. But again, freedom of teaching is a step towards the normal state; it amounts to an admission that the problem of education is one which temporal authorities are incompetent to solve. Positivists would be the last to deny that education ought to be regularly organised. Only they assert, first, that as long as the spiritual interregnum lasts no organisation is possible; and secondly, that whenever the acceptance of a new synthesis makes it possible, it will be effected by the spiritual power to which that synthesis gives

rise. In the meantime no general system of State education should be attempted; except so far as it may be wise to continue State assistance to those branches of instruction which are the most liable to be neglected by private enterprise, especially reading and writing. Moreover, there are certain institutions either established or revived by the Convention for higher training in special subjects; these ought to be carefully preserved, and brought up to the present state of our knowledge, for they contain the germs of principles which will be most valuable when the problem of reorganising general education comes before us. But all the institutions abolished by the Convention ought now to be finally suppressed. Even the scientific academies should form no exception to this rule; for the harm which they have done both intellectually and morally since their reinstalment has fully justified the wisdom of the men who decided on their abolition. Government should no doubt exercise constant vigilance over all private educational institutions; but this should have nothing to do with their doctrines, but with their morality, a point scandalously neglected in the present state of the law. These should be the limits of State interference in education. With these exceptions it should be left to the unrestricted efforts of private associations, so as to give every opportunity for a definitive educational system to establish itself. For to pretend that any satisfactory system exists at present would only be a hypocritical subterfuge on the part of the authorities. The most important step towards freedom of education would be the suppression of all grants to theological or metaphysical societies, leaving each man free to support the religion and the system of instruction which he prefers. This, however, should be carried out in a just and liberal spirit worthy of the cause, and without the least taint of personal dislike or party feeling. Full indemnity should be given to members of Churches or Universities upon whom these changes would come unexpectedly. By acting in this spirit it will be far less difficult to carry out measures which are obviously indicated by the position in which we stand. As there is now no doctrine which commands general assent, it would be an act of retrogression to give legal sanction to any one of the old creeds, whatever their former claim to spiritual ascendancy. It is quite in accordance with the republican spirit to refuse such sanction, notwithstanding the tendency that there is to allow

ideologists to succeed to the Academic offices held under the constitutional system by psychologists.

Order demands centralisation.

But Positivism will have as beneficial an influence on public Order as on Liberty. It holds, in exact opposition to revolutionary prejudices, that the central power should preponderate over the local. The constitutionalist principle of separating the legislative from the executive is only an empirical imitation of the larger principle of separating temporal and spiritual power, which was adopted in the Middle Ages. There will always be a contest for political supremacy between the central and local authorities; and it is an error into which from various causes we have fallen recently, to attempt to balance them against each other. The whole tendency of French history has been to let the central power preponderate, until it degenerated and became retrograde towards the end of the seventeenth century. Our present preference for the local power is therefore an historical anomaly, which is sure to cease as soon as the fear of reaction has passed away. And as Republicanism secures us against any dangers of this kind, our political sympathies will soon resume their old course. The advantages of the central power are first that it is more directly responsible than the other; and secondly its increasingly practical character, which renders it more adapted to our essential needs and less disposed to set up any claims to spiritual influence. This last feature is of the highest importance, and is likely to become every day more marked. Whereas the local or legislative power, not having its functions clearly defined, is very apt to interfere in theoretical questions without being in any sense qualified for doing so. Its preponderance would then in most cases be injurious to intellectual freedom, which, as it feels instinctively, will ultimately result in the rise of a spiritual authority destined to supersede its own. On the strength of these tendencies, which have never before been explained, Positivists have little hesitation in siding in almost all cases with the central as against the local power. Philosophers, whom no one can accuse of reactionist or servile views, who have given up all political prospects, and who are devoting themselves wholly to the work of spiritual reorganisation, need not be afraid to take this course; and they ought to exert themselves vigorously in making the central power preponderant, limiting the functions of the local power to what is strictly indispensable. And, notwithstanding

all appearances to the contrary, republicanism will help to modify the revolutionary feeling on this point. It removes the distrust of authority caused naturally by the retrograde spirit of the old monarchy; and it makes it easier to repress any further tendencies of the same kind, without necessitating an entire change in the character of our policy for the sake of providing against a contingency of which there is now so little fear. As soon as the central power has given sufficient proof of its progressive intentions, there will be no unwillingness on the part of the French public to restrict the powers of the legislative body, whether by reducing it to one-third of its present numbers, which are so far too large, or even by limiting its functions to the annual vote of the supplies. During the last phase of the counter-revolution, and the long period of parliamentary government which followed, a state of feeling has arisen on this subject which is quite exceptional, and which sound philosophical teaching, and wise action on the part of government, will easily modify. It is inconsistent with the whole course of French history; and only leads us into the mistake of imitating the English constitution, which is adapted to no other country. The very extension which has just been given to the representative system will bring it into discredit, by showing it to be as futile and subversive in practice as philosophy had represented it to be in theory.

Intimate connection of Liberty with Order.

Such, then, is the way in which Positivism would interpret these two primary conditions of our present policy, Liberty and Public Order. But besides this, it explains and confirms the connection which exists between them. It teaches, in the first place, that true liberty is impossible at present without the vigorous control of a central power, progressive in the true sense of the word, wise enough to abdicate all spiritual influence and to keep to its own practical functions. Such a power is needed in order to check the despotic spirit of the various doctrines now in vogue. As all of them are more or less inconsistent with the principle of separation of powers, they would all be willing to employ forcible means of securing uniformity of opinion. Besides, the anarchy which is caused by our spiritual interregnum might, but for a strong government, very probably interfere with the philosophical freedom which the habits of modern life afford us. Conversely, unless Liberty in the sense here spoken of be granted, it will be impossible for the central

power to maintain itself in the position which public order requires. The obstacle to that position at present is the fear of reaction; and a scrupulous regard for freedom is the only means of removing this feeling, which though perhaps unfounded is but too natural. All fears will be allayed at once when liberty of instruction and of association becomes part of the law of the land. There will then be no hope, and indeed no wish, on the part of government to regulate our social institutions in conformity with any particular doctrine.

The object of this chapter has been to show the social value of Positivism. We have found that not merely does it throw light upon our Future policy, but that it also teaches us how to act upon the Present; and these indications have in both cases been based upon careful examination of the Past, in accordance with the fundamental laws of human development. It is the only system capable of handling the problem now proposed by the more advanced portion of our race to all who would claim to guide them. That problem is this: to reorganise human life, irrespectively of god or king; recognising the obligation of no motive, whether public or private, other than Social Feeling, aided in due measure by the positive science and practical energy of Man.

CHAPTER III.

THE ACTION OF POSITIVISM UPON THE WORKING CLASSES.

Positivism will not for the present recommend itself to the governing classes, so much as to the People.

Positivism whether looked at as a philosophical system or as an instrument of social renovation, cannot count upon much support from any of the classes, whether in Church or State, by whom the government of mankind has hitherto been conducted. There will be isolated exceptions of great value, and these will soon become more numerous; but the prejudices and passions of these classes will present serious obstacles to the work of moral and mental reorganisation which constitutes the second phase of the great Western revolution. Their faulty education and their repugnance to system prejudice them against a philosophy which subordinates specialities to general principles. Their aristocratic instincts make it very difficult for them to recognise the supremacy of Social Feeling; that doctrine which lies at the root of social regeneration, as conceived by Positivism. That no support can be expected from the classes who were in the ascendant before the Revolution, is of course obvious; and we shall probably meet with opposition, quite as real though more carefully concealed, from the middle classes, to whom that revolution transferred the authority and social influence which they had long been coveting. Their thoughts are entirely engrossed with the acquisition of power; and they concern themselves but little with the mode in which it is used, or the objects to which it is directed. They were quite convinced that the Revolution had found a satisfactory issue in the parliamentary system instituted during the recent period of political oscillation. They will long continue to regret that stationary period, because it was peculiarly favourable to their restless ambition. A movement tending to the complete regeneration of society is almost as much dreaded now by the middle classes as it was formerly by the higher. And both would at all events agree

in prolonging, so far as republican institutions admitted, the system of theological hypocrisy, the only effective instrument of retrogression now left to them. This ignoble system offers the double attraction of securing respect and submission on the part of the masses, while imposing no unpleasant duties on their governors. All their critical and metaphysical prejudices indispose them to terminate the state of spiritual anarchy which is the greatest obstacle to social regeneration; while at the same time their ambition dreads the establishment of a new moral authority, the restrictive influence of which would of course press most heavily upon themselves. In the eighteenth century, men of rank, and even kings, accepted the purely negative philosophy that was then in vogue: it removed many obstacles, it was an easy path to reputation, and it imposed no great sacrifice. But we can hardly hope from this precedent that the wealthy and literary classes of our own time will be equally willing to accept Positive philosophy; the declared purpose of which is to discipline our intellectual powers, in order to reorganise our modes of life.

The avowal of such a purpose is quite sufficient to prevent Positivism from gaining the sympathies of any one of the governing classes. The classes to which it must appeal are those who have been left untrained in the present worthless methods of instruction by words and entities, who are animated with strong social instincts, and who consequently have the largest stock of good sense and good feeling. In a word it is among the working classes that the new philosophers will find their most energetic allies. The force necessary for social regeneration depends essentially on the combined action of those two extreme terms of the ultimate social order. Notwithstanding their difference of position, a difference which indeed is more apparent than real, there are strong affinities between them, both morally and intellectually. Both have the same sense of the real, the same preference for the useful, and the same tendency to subordinate special points to general principles. Morally they resemble each other in generosity of feeling, in wise unconcern for material prospects, and in indifference to worldly grandeur. This at least will be the case as soon as philosophers in the true sense of that word have mixed sufficiently with the nobler members of the working classes to raise their own character to its proper level. When the sym-

pathies which unite them upon these essential points have had time to show themselves, it will be felt that the philosopher is, under certain aspects, a member of the working class fully trained; while the working man is in many respects a philosopher without the training. Both too will look with similar feelings upon the intermediate or capitalist class. As that class is necessarily the possessor of material power, the pecuniary existence of both will as a rule be dependent upon it.

The working man who accepts his position is favourably situated for the reception of comprehensive principles and generous sympathies.

These affinities follow as a natural result from their respective position and functions. The reason of their not having been recognised more distinctly is, that at present we have nothing that can be called a philosophic class, or at least it is only represented by a few isolated types. Workmen worthy of their position are happily far less rare; but hitherto it is only in France, or rather in Paris, that they have shown themselves in their true light, as men emancipated from chimerical beliefs, and careless of the empty prestige of social position. It is, then, only in Paris, that the truth of the preceding remarks can be fully verified.

The occupations of working men are evidently far more conducive to philosophical views than those of the middle classes; since they are not so absorbing as to prevent continuous thought, even during the hours of labour. And besides having more time for thinking, they have a moral advantage in the absence of any responsibility when their work is over. The workman is preserved by his position from the schemes of aggrandisement which are constantly harassing the capitalist. Their difference in this respect causes a corresponding difference in their modes of thought; the one cares more for general principles, the other more for details. To a sensible workman, the system of dispersive speciality now so much in vogue shows itself in its true light. He sees it, that is, to be brutalising, because it would condemn his intellect to the most paltry mode of culture, such as will never be accepted in France in spite of the irrational endeavours of our Anglomaniac economists. To the capitalist on the contrary and even to the man of science that system, however rigidly and consistently carried out, will seem far less degrading; or rather it will be looked upon as most desirable, unless his education has been such as to counteract these tendencies, and to give him the desire and the ability for abstract and general thought.

Morally, the contrast between the position of the workman and the capitalist is even more striking. Proud as most men are of worldly success, the degree of moral or mental excellence implied in the acquisition of wealth or power, even when the means used have been strictly legitimate, is hardly such as to justify that pride. Looking at intrinsic qualities rather than at visible results, it is obvious that practical success, whether in industry or in war, depends far more on character than on intellect or affection. The principal condition for it is the combination of a certain amount of energy with great caution, and a fair share of perseverance. When a man has these qualities, mediocrity of intellect and moral deficiency will not prevent his taking advantage of favourable chances; chance being usually a very important element in worldly success. Indeed it would hardly be an exaggeration to say that poverty of thought and feeling has often something to do with forming and maintaining the disposition requisite for the purpose. Vigorous exertion of the active powers is more frequently induced by the personal propensities of avarice, ambition, or vanity, than by the higher instincts. Superiority of position, when legitimately obtained, deserves respect; but the philosopher, like the religionist, and with still better grounds, refuses to regard it as a proof of moral superiority, a conclusion which would be wholly at variance with the true theory of human nature.

The life of the workman, on the other hand, is far more favourable to the development of the nobler instincts. In practical qualities he is usually not wanting, except in caution, a deficiency which makes his energy and perseverance less useful to himself, though fully available for society. But it is in the exercise of the higher feelings that the moral superiority of the working class is most observable. When our habits and opinions have been brought under the influence of systematic principles, the true character of this class, which forms the basis of modern society, will become more distinct; and we shall see that home affections are naturally stronger with them than with the middle classes, who are too much engrossed with personal interests for the full enjoyment of domestic ties. Still more evident is their superiority in social feelings strictly so called, for these with them are called into daily exercise from earliest childhood. Here it is that we find the highest and

most genuine types of friendship, and this even amongst those who are placed in a dependent position, aggravated often by the aristocratic prejudices of those above them, and whom we might imagine on that account condemned to a lower moral standard. We find sincere and simple respect for superiors, untainted by servility, not vitiated by the pride of learning, not disturbed by the jealousies of competition. Their personal experience of the miseries of life is a constant stimulus to the nobler sympathies. In no class is there so strong an incentive to social feeling, at least to the feeling of Solidarity between contemporaries; for all are conscious of the support that they derive from union, support which is not at all incompatible with strong individuality of character. The sense of Continuity with the past has not, it is true, been sufficiently developed; but this is a want which can only be supplied by systematic culture. It will hardly be disputed that there are more remarkable instances of prompt and unostentatious self-sacrifice at the call of a great public necessity in this class than in any other. Note too that, in the utter absence of any systematic education, all these moral excellences must be looked upon as inherent in the class. It is impossible to attribute them to theological influence, now that they have so entirely shaken off the old faith. And although it is only in Paris that this hitherto unrecognised type can be seen in its perfection, yet the fact of its existence in the centre of Western Europe is enough for all rational observers. A type so fully in accordance with what we know of human nature cannot fail ultimately to spread everywhere, especially when these spontaneous tendencies are placed under the systematic guidance of Positivism.

These remarks will prepare us to appreciate the wise and generous instincts of the Convention in looking to the Proletariate as the mainspring of its policy; and this not merely on account of the incidental danger of foreign invasion, but in dealing with the larger question of social regeneration, which it pursued so ardently, though in such ignorance of its true principles. Owing however to the want of a satisfactory system, and the disorder produced by the metaphysical theories of the time, the spirit in which this alliance with the people was framed was incompatible with the real object in view. It was considered that government ought as a rule to be in the hands of the people. Now under the special circumstances of

This the Convention felt; but they encouraged the People to seek political supremacy, for which they are not fit.

the time popular government was undoubtedly very useful. The existence of the republic depended almost entirely upon the proletariate, the only class that stood unshaken and true to its principles. But in the absolute spirit of the received political theories, this state of things was regarded as normal, a view which is incompatible with the most important conditions of modern society. It is of course always right for the people to assist government in carrying out the law, even to the extent of physical force, should the case require it. Interference of this subordinate kind, whether in foreign or internal questions, so far from leading to anarchy, is obviously a guarantee for order which ought to exist in every properly constituted society. Indeed in this respect our habits in France are still very defective; men are too often content to remain mere lookers on, while the police to whom they owe their daily protection is doing its duty. But for the people to take a direct part in government, and to have the final decision of political measures, is a state of things which in modern society is only adapted to times of revolution. To recognise it as final would lead at once to anarchy, were it not so utterly impossible to realise.

It is only in exceptional cases that the People can be really 'sovereign.'

Positivism rejects the metaphysical doctrine of the Sovereignty of the people. But it appropriates all that is really sound in the doctrine, and this with reference not merely to exceptional cases but to the normal state; while at the same time it guards against the danger involved in its application as an absolute truth. In the hands of the revolutionary party the doctrine is generally used to justify the right of insurrection. Now in Positive Polity this right is looked upon as an ultimate resource with which no society should allow itself to dispense. Absolute submission, which is too strongly inculcated by modern Catholicism, would expose us to the danger of tyranny. Insurrection may be regarded scientifically as a sort of reparative crisis of which societies stand in more need than individuals, in accordance with the well-known biological law, that the higher and the more complicated the organism, the more frequent and also the more dangerous is the pathological state. Therefore the fear that Positivism when generally accepted will encourage passive obedience, is perfectly groundless; although it is certainly not favourable to the pure revolutionary spirit, which would fain take the disease for the normal type of health. Its whole character is so essentially relative, that it finds no

difficulty in accepting subordination as the rule, and yet in allowing for exceptional cases of revolt; a course by which good sense and human dignity are alike satisfied. Positivism looks upon insurrection as a dangerous remedy that should be reserved for extreme cases; but it would never scruple to sanction and even to encourage it when it was really indispensable. This is quite compatible with refusing, as a rule, to submit the decision of political questions and the choice of rulers to judges who are obviously incompetent; and who, under the influence of Positivism, will be induced voluntarily to abdicate rights subversive of order.

The truth involved in the expression is that the well-being of the people should be the one great object of government.

The metaphysical doctrine of the Sovereignty of the people contains, however, a truth of permanent value, though in a very confused form. This truth Positivism separates very distinctly from its dangerous alloy, yet without weakening, on the contrary, with the effect of enforcing its social import. There are two distinct conceptions in this doctrine, which have hitherto been confounded; a political conception applicable to certain special cases; a moral conception applicable to all.

In the first place the name of the whole body politic ought to be invoked in the announcement of any special measure of which the motives are sufficiently intelligible, and which directly concern the practical interests of the whole community. Under this head would be included decisions of law courts, declarations of war, etc. When society has reached the Positive state, and the sense of universal solidarity is more generally diffused, there will be even more significance and dignity in such expressions than there is now, because the name invoked will no longer be that of a special nation, but that of Humanity as a whole. It would be absurd however to extend this practice to those still more numerous cases where the people is incompetent to express any opinion, and has merely to adopt the opinion of superior officers who have obtained its confidence. This may be owing either to the difficulty of the question or to the fact of its application being indirect or limited. Such, for instance, would be enactments, very often of great importance, which deal with scientific principles; or again most questions relating to special professions or branches of industry. In all these cases popular good sense would under Positivist influence easily be kept clear from political illusions. It is only under the stimulus of metaphysical pride that such illusions become

dangerous; and the untaught masses have but little experience of this feeling.

There is, however, another truth implied in the expression, Sovereignty of the people. It implies that it is the first of duties to concentrate all the efforts of society upon the common good. And in this there is a more direct reference to the working class than to any other; first, on account of their immense numerical superiority, and, secondly, because the difficulties by which their life is surrounded require special interference to a degree which for other classes would be unnecessary. From this point of view is it a principle which all true republicans may accept. It is, in fact, identical with what we have laid down as the universal basis of morality, the direct and permanent preponderance of social feeling over all personal interests. Not merely, then, is it incorporated by Positivism, but, as was shown in the first chapter, it forms the primary principle of the system, even under the intellectual aspect. Since the decline of Catholicism the metaphysical spirit has been provisionally the guardian of this great social precept. Positivism now finally appropriates it, and purifies it for the future from all taint of anarchy. Revolutionists, as we should expect from their characteristic dislike to the separation of the two powers, had treated the question politically. Positivism avoids all danger by shifting it to the region of morality. I shall show presently that this very salutary change, so far from weakening the force of the principle, increases its permanent value, and at the same time removes the deceptive and subversive tendencies which are always involved in the metaphysical mode of regarding it.

The People's function is to assist the spiritual power in modifying the action of government.

What, then, it will be asked, is the part assigned to the Proletariate in the final constitution of society? The similarity of position which I pointed out between themselves and the philosophic class suggests the answer. They will be of the most essential service to the spiritual power in each of its three social functions, judgment, counsel, and even education. All the intellectual and moral qualities that we have just indicated in this class concur in fitting them for this service. If we except the philosophic body, which is the recognised organ of general principles, there is no class which is so habitually inclined to take comprehensive views of any subject. Their superiority in Social Feeling is still more obvious. In this

even the best philosophers are rarely their equals; and it would be a most beneficial corrective of the tendency of the latter to over-abstraction to come into daily contact with the noble and spontaneous instincts of the people. The working class, then, is better qualified than any other for understanding, and still more for sympathising with the highest truths of morality, though it may not be able to give them a systematic form. And as we have seen it is in social morality, the most important and the highest of the three branches of Ethics, that their superiority is most observable. Besides, independently of their intrinsic merits, whether intellectual or moral, the necessities of their daily life serve to impress them with respect for the great rules of morality, which in most cases were framed for their own protection. To secure the application of these rules in daily life, is a function of the spiritual power in the performance of which it will receive but slight assistance from the middle classes; for as it is with them that temporal power naturally resides, it is their own misuse of power that has to be controlled and set right. The working classes are the chief sufferers from the selfishness and domineering of men of wealth and power. For this reason they are the likeliest to come forward in defence of public morality. And they will be all the more disposed to give it their hearty support, if they have nothing to do directly with political administration. Habitual participation in temporal power, to say nothing of its unsettling influence, would lead them away from the best remedy for their sufferings of which the constitution of society admits. Popular sagacity will soon detect the utter hollowness of the off-hand solutions that are now being obtruded upon us. The people will rapidly become convinced that the surest method of satisfying all legitimate claims lies in the moral agencies which Positivism offers, though it appeals to them at the same time to abdicate a political function which is either illusory or subversive.

So natural is this tendency of the people to rally round the spiritual power in defence of morality, that we find it to have been the case even in mediæval times. Indeed this it is which explains the sympathies which Catholicism still retains, notwithstanding its general decline, in the countries where Protestantism has failed to establish itself. Superficial observers often mistake these sympathies for evidence of sincere attachment to the old creeds, though in point of fact they are more

thoroughly undermined in those countries than anywhere else. It is an historical error which will, however, soon be corrected by the reception which these nations, so wrongly imagined to be in a backward stage of political development, will give to Positivism. For they will soon see its superiority to Catholicism in satisfying the primary necessity with which their social instincts are so justly preoccupied.

In the Middle Ages, however, the relations between the working classes and the priesthood were hampered by the institution of serfage, which was not wholly abolished until Catholicism had begun to decline. In fact a careful study of history will show that one of the principal causes of its decline was the want of popular support. The mediæval church was a noble, but premature attempt. Disbelief in its doctrines, and also retrograde tendencies in its directors, had virtually destroyed it, before the Proletariate had attained sufficient social importance to support it successfully, supposing it could have deserved their support. But we are now sufficiently advanced for the perfect realisation of the Catholic ideal in Positivism. And the principal means of realising it will be the formation of an alliance between philosophers and the working classes, for which both are alike prepared by the negative and positive progress of the last five centuries.

Their combined efforts result in the formation of Public Opinion.

The direct object of their combined action will be to set in motion the force of Public Opinion. All views of the future condition of society, the views of practical men as well as of philosophic thinkers, agree in the belief that the principal feature of the state to which we are tending will be the increased influence which Public Opinion is destined to exercise.

It is in this beneficial influence that we shall find the surest guarantee for morality; for domestic and even for personal morality, as well as for social. For as the whole tendency of Positivism is to induce everyone to live as far as possible without concealment, the public will be intrusted with a strong check upon the life of the individual. Now that all theological illusions have become so entirely obsolete, the need of such a check is greater than it was before. It compensates for the insufficiency of natural goodness which we find in most men, however wisely their education has been conducted. Except the noblest of joys, that which springs from social sympathy when called into constant exercise, there is no reward for doing

right so satisfactory as the approval of our fellow-beings. Even under theological systems it has been one of our strongest aspirations to live esteemed in the memory of others. And still more prominence will be given to this noble form of ambition under Positivism, because it is the only way now left of satisfying the inward desire of prolonging life beyond the present. And the increased force of Public Opinion will correspond to the increased necessity for it. The peculiar reality of Positive doctrine and its constant conformity with facts facilitate the recognition of its principles, and remove all obscurity in their application. They are not to be evaded by subterfuges like those to which metaphysical and theological principles, from their vague and absolute character, have been always liable. Again, the primary principle of Positivism, which is to judge every question by the standard of social interests, is in itself a direct appeal to Public Opinion; since the public is naturally the judge of the good or bad effect of action upon the common welfare. Under theological and metaphysical systems no appeal of this sort was recognised; because the objects upheld as the highest aims of life were purely personal.

In political questions the application of our principle is still more obvious. For political morality Public Opinion is almost our only guarantee. We feel its force even now in spite of the intellectual anarchy in which we live, whenever any great public excitement controls the wide divergence of convictions which in most cases neutralises it. Indeed, we feel it to our cost sometimes when the popular mind has taken a wrong direction; government in such cases being very seldom able to offer adequate resistance. These cases may convince us how irresistible this power will prove when used legitimately, and when it is formed by systematic accordance in general principles, instead of by a precarious and momentary coincidence of feeling. And here we see more clearly than ever how impossible it is to effect any permanent reconstruction of the institutions of society, without a previous reorganisation of opinion and of life. The spiritual basis is necessary, not merely to determine the character of the temporal reconstruction, but to supply the principal motive force by which the work is to be carried out. Intellectual and moral harmony will gradually be restored, and under its influence the new political system will by degrees arise. Social improvements of the highest importance may therefore

be realised long before the work of spiritual reorganisation is completed. We find in mediæval history that Catholicism exercised a powerful influence on society during its emergence from barbarism, before its own internal constitution had advanced far. And this will be the case to a still greater degree with the regeneration which is now in progress.

Public opinion involves, (1) principles of social conduct, (2) their acceptance by society at large, (3) an organ through which to enunciate them.

Having defined the sphere within which Public Opinion should operate, we shall find little difficulty in determining the conditions requisite for its proper organisation. These are, first, the establishment of fixed principles of social action; secondly, their adoption by the public, and its consent to their application in special cases; and, lastly, a recognised organ to lay down the principles, and to apply them to the conduct of daily life. Obvious as these three conditions appear, they are still so little understood that it will be well to explain each of them somewhat more fully.

The first condition, that of laying down fixed principles, is in fact the extension to social questions of that separation between theory and practice, which in subjects of less importance is universally recognised. This is the aspect in which the superiority of the new spiritual system to the old is most perceptible. The principles of moral and political conduct that were accepted in the Middle Ages were little better than empirical, and owed their stability entirely to the sanction of religion. In this respect, indeed, the superiority of Catholicism to the systems which preceded it, consisted merely in the fact of separating its precepts from the special application of them. By making its precepts the distinct object of preliminary study, it secured them against the bias of human passions. Yet important as this separation was, the system was so defective intellectually, that the successful application of its principles depended simply on the good sense of the teachers; for the principles in themselves were at first as vague and as absolute as the creeds from which they were derived. The influence exercised by Catholicism was due to its indirect action upon social feeling in the only mode then possible. But the claims with which Positivism presents itself are far more satisfactory. It is based on a complete synthesis; one which embraces, not the outer world only, but the inner world of human nature. This, while in no way detracting from the practical value of social principles, gives them the imposing weight of theoretical truth; and

ensures their stability and coherence, by connecting them with the whole series of laws on which the life of man and of society depend. For these laws will corroborate even those which are not immediately deduced from them. By connecting all our rules of action with the fundamental conception of social duty, we render their interpretation in each special case clear and consistent, and we secure it against the sophisms of passion. Principles such as these, based on reason, and rendering our conduct independent of the impulses of the moment, are the only means of sustaining the vigour of Social Feeling, and at the same time of saving us from the errors to which its unguided suggestions so often lead. Direct and constant culture of Social Feeling in public as well as in private life is no doubt the first condition of morality. But the natural strength of Self-love is such that something besides this is required to control it. The course of conduct must be traced beforehand in all important cases by the aid of demonstrable principles, adopted at first upon trust, and afterwards from conviction.

There is no art whatever in which, however ardent and sincere our desire to succeed, we can dispense with knowledge of the nature and conditions of the object aimed at. Moral and political conduct is assuredly not exempt from such an obligation, although we are more influenced in this case by the direct promptings of feeling than in any other of the arts of life. It has been shown only too clearly by many striking instances how far Social Feeling may lead us astray when it is not directed by right principles. It was for want of fixed convictions that the noble sympathies entertained by the French nation for the rest of Europe at the outset of the Revolution so soon degenerated into forcible oppression when her retrograde leader began his seductive appeal to selfish passions. Inverse cases are still more common; and they illustrate the connection of feeling and opinion as clearly as the others. A false social doctrine has often favoured the natural ascendancy of Self-love, by giving a perverted conception of public well-being. This has been too plainly exemplified in our own time by the deplorable influence which Malthus's sophistical theory of population obtained in England. This mischievous error met with very little acceptance in the rest of Europe, and it has been already refuted by the nobler thinkers of his own country; but it still gives the show of scientific sanction to the criminal antipathy

of the governing classes in Great Britain to all effectual measures of reform.

Next to a system of principles, the most important condition for the exercise of Public Opinion is the existence of a social atmosphere favourable to the acceptance of these principles. Now it was here that Catholicism proved so weak; and therefore, even had its doctrine been less perishable, its decline was unavoidable. But the defect is amply supplied in the new spiritual order, which, as I have before shown, will receive the influential support of the working classes. And the need of such assistance is as certain as the readiness with which it will be yielded. For though the intrinsic efficacy of Positive teaching is far greater than that of any doctrine not susceptible of demonstration, yet the convictions it inspires cannot be expected to dispense with the aid of vigorous popular support. Human nature is imperfectly organised; and the influence which Reason exercises over it is not by any means so great as this supposition would imply. Even Social Feeling, though its influence is far greater than that of Reason, would not in general be sufficient for the right guidance of practical life, if Public Opinion were not constantly at hand to support the good inclinations of individuals. The arduous struggle of Social Feeling against Self-love requires the constant assertion of true principles to remove uncertainty as to the proper course of action in each case. But it requires also something more. The strong reaction of All upon Each is needed, whether to control selfishness or to stimulate sympathy. The tendency of our poor and weak nature to give way to the lower propensities is so great that, but for this universal co-operation, Feeling and Reason would be almost always inadequate to their task. In the working class we find the requisite conditions. They will, as we have seen, form the principal source of opinion, not merely from their numerical superiority, but also from their intellectual and moral qualities, as well as from the influence directly due to their social position. Thus it is that Positivism views the great problem of human life, and shows us for the first time that the bases of a solution already exist in the very structure of the social organism.

Working men's clubs.

Working men, whether as individuals or, what is still more important, collectively, are now at liberty to criticise all the details, and even the general principles, of the social system under which they live; affecting, as it necessarily does, them-

selves more nearly than any other class. The remarkable eagerness lately shown by our people to form clubs, though there was no special motive for it, and no very marked enthusiasm, was a proof that the checks which had previously prevented this tendency from showing itself were quite unsuited to our times. Nor is this tendency likely to pass away; on the contrary, it will take deeper root and extend more widely, because it is thoroughly in keeping with the habits, feelings, and wants of working men, who form the majority in these meetings. A consistent system of social truth will largely increase their influence, by giving them a more settled character and a more important aim. So far from being in any way destructive, they form a natural though imperfect model of the mode of life which will ultimately be adopted in the regenerate condition of Humanity. In these unions social sympathies are kept in constant action by a stimulus of a most beneficial kind. They offer the speediest and most effectual means of elaborating Public Opinion: this at least is the case when there has been a fair measure of individual training. No one at present has any idea of the extent of the advantages which will one day spring from these spontaneous meetings, when there is an adequate system of general principles to direct them. Spiritual reorganisation will find them its principal basis of support, for they secure its acceptance by the people; and this will have the greater weight, because it will be always given without compulsion or violence. The objection that meetings of this kind may lead to dangerous political agitation, rests upon a misinterpretation of the events of the Revolution. So far from their stimulating a desire for what are called political rights, or encouraging their exercise in those who possess them, their tendency is quite in the opposite direction. They will soon divert working men entirely from all useless attempts to interfere with existing political institutions, and bring them to their true social function, that of assisting and carrying out the operations of the new spiritual power. It is a noble prospect which is thus held out to them by Positivism, a prospect far more inviting than any of the metaphysical illusions of the day. The real intention of the Club is to form a provisional substitute for the Church of old times, or rather to prepare the way for the religious building of the new form of worship, the worship of Humanity; which, as I shall explain in a subsequent chapter,

will be gradually introduced under the regenerating influence of Positive doctrine. Under our present republican government all progressive tendencies are allowed free scope, and therefore it will not be long before our people accept this new vent for social sympathies, which in former times could find expression only in Catholicism.

In this theory of Public Opinion one condition yet remains to be described. A philosophic organ is necessary to interpret the doctrine; the influence of which would otherwise in most cases be very inadequate. This third condition has been much disputed; but it is certainly even more indispensable than the second. And in fact it has never been really wanting, for every doctrine must have had some founder, and usually has a permanent body of teachers. It would be difficult to conceive that a system of moral and political principles should be possessed of great social influence, and yet at the same time that the men who originate or inculcate the system should exercise no spiritual authority. It is true that this inconsistency did for a time exist under the negative and destructive influence of Protestantism and Deism, because men's thoughts were for the time entirely taken up with the struggle to escape from the retrograde tendencies of Catholicism. During this long period of insurrection, each individual became a sort of priest; each, that is, followed his own interpretation of a doctrine which needed no special teachers, because its function was not to construct but to criticise. All the constitutions that have been recently established on metaphysical principles give a direct sanction to this state of things, in the preambles with which they commence. They apparently regard each citizen as competent to form a sound opinion on all social questions, thus exempting him from the necessity of applying to any special interpreters. This extension to the normal state of things of a phase of mind only suited to the period of revolutionary transition, is an error which I have already sufficiently refuted.

In the minor arts of life, it is obvious that general principles cannot be laid down without some theoretical study; and that the application of these rules to special cases is not to be entirely left to the untaught instinct of the artisan. And can it be otherwise with the art of Social Life, so far harder and more important than any other, and in which, from its principles being less simple and less precise, a special explan-

ation of them in each case is even more necessary? However perfect the demonstration of social principles may become, it must not be supposed that knowledge of Positive doctrine, even when it has been taught in the most efficient way, will dispense with the necessity of frequently appealing to the philosopher for advice in questions of practical life, whether private or public. And this necessity of an interpreter to intervene occasionally between the principle and its application, is even more evident from the moral than it is from the intellectual aspect. Certain as it is that no one will be so well acquainted with the true character of the doctrine as the philosopher who teaches it, it is even more certain that none is so likely as himself to possess the moral qualifications of purity, of exalted aims, and of freedom from party spirit, without which his counsels could have but little weight in reforming individual or social conduct. It is principally through his agency that we may hope in most cases to bring about that reaction of All upon Each, which, as we have seen, is of such indispensable importance to practical morality. Philosophers are not indeed the principal source of Public Opinion, as intellectual pride so often leads them to believe. Public Opinion proceeds essentially from the free voice and spontaneous co-operation of the people. But in order that the full weight of their unanimous judgment may be felt, it must be announced by some recognised organ. There are, no doubt, rare cases where the direct expression of popular feeling is enough, but these are quite exceptional. Thus working men and philosophers are mutually necessary, not merely in the creation of Public Opinion, but also in most cases in the manifestation of it. Without the first, the doctrine, however well established, would not have sufficient force. Without the second, it would usually be too incoherent to overcome those obstacles in the constitution of man and of society, which make it so difficult to bring practical life under the influence of fixed principles.

In fact, this necessity for some systematic organ to direct and give effect to Public Opinion, has always been felt, even amidst the spiritual anarchy which at present surrounds us, on every occasion in which such opinion has played any important part. For its effect on these occasions would have been null and void but for some individual to take the initiative and personal responsibility. This is frequently verified in private

life by cases in which we see the opposite state of things; we see principles which no one would think of contesting, practically inadequate, for want of some recognised authority to apply them. It is a serious deficiency, which is, however, compensated, though imperfectly, by the greater facility of arriving at the truth in such cases, and by the greater strength of the sympathies which they call forth. But in public life, with its more difficult conditions and more important claims, such entire absence of systematic intervention could never be tolerated. In all public transactions even now we may perceive the participation of a spiritual authority of one kind or other; the organs of which, though constantly fluctuating, are in most cases metaphysicians or literary men writing for the press. Thus even in the present anarchy of feelings and convictions, Public Opinion cannot dispense with guides and interpreters. Only it has to be content with men who at the best can only offer the guarantee of personal responsibility, without any reliable security either for the stability of their convictions or the purity of their feelings. But now that the problem of organising Public Opinion has once been proposed by Positivism, it cannot remain long without a solution. It plainly reduces itself to the principle of separating the two social powers; just as we have seen that the necessity of an established doctrine rested on the analogous principle of separating theory from practice. It is clear, on the one hand, that sound interpretation of moral and political rules, as in the case of any other art, can only be furnished by philosophers engaged in the study of the natural laws on which they rest. On the other hand these philosophers, in order to preserve that breadth and generality of view which is their principal intellectual characteristic, must abstain scrupulously from all regular participation in practical affairs, and especially from political life: on the ground that its specialising influence would soon impair their speculative capacity. And such a course is equally necessary on moral grounds. It helps to preserve purity of feeling and impartiality of character; qualities essential to their influence upon public as well as upon private life.

Such, in outline, is the Positive theory of Public Opinion. In each of its three constituent elements, the Doctrine, the Power, and the Organ, it is intimately connected with the

whole question of spiritual reorganisation: or rather, it forms the simplest mode of viewing that great subject. All the essential parts of it are closely related to each other. Positive principles, on the one hand, cannot count on much material support, except from the working classes; these in their turn will for the future regard Positivism as the only doctrine with which they can sympathise. So, again, with the philosophic organs of opinion; without the People, their necessary independence cannot be established or sustained. To our literary classes the separation of the two powers is instinctively repugnant, because it would lay down systematic limits to the worthless ambition which now actuates them. And it will be disliked as strongly by the rich classes, who will look with fear upon a new moral authority destined to impose an irresistible check upon their selfishness. At present it will be generally understood and welcomed only by the proletary class, who have more aptitude for general views and for social sympathy. In France especially they are less under the delusion of metaphysical sophisms and of aristocratic prestige than any other class; and the Positivist view of this primary condition of social regeneration will find a ready entrance into their minds and hearts.

All three conditions of Public Opinion exist, but have not yet been combined.

Our theory of Public Opinion shows us at once how far we have already gone in organising this great regulator of modern society; how far we still fall short of what is wanted. The Doctrine has at last arisen: there is no doubt of the existence of the Power; and even the Organ is not wanting. But they do not as yet stand in their right relation to each other. The effective impulse towards social regeneration depends, then, on one ultimate condition; the formation of a firm alliance between philosophers and proletaries.

Of this powerful coalition I have already spoken. I have now to explain the advantages which it offers to the people in the way of obtaining sufficient recognition of all legitimate claims.

Of these advantages, the principal, and that by which the rest will speedily be developed and secured, is the important social function which is hereby conferred upon them. They become auxiliaries of the new spiritual power; auxiliaries indispensable to its action. This vast proletary class, which ever since its rise in the Middle Ages has been shut out from

the political system, will now assume the position for which by nature it is best adapted, and which is most conducive to the general well-being of society. Its members, independently of their special vocation, will at last take a regular and most important part in public life, a part which will compensate for the hardships inseparable from their social position. Their combined action, far from disturbing the established order of things, will be its most solid guarantee, from the fact of being moral, not political. And here we see definitely the alteration which Positivism introduces in the revolutionary conception of the action of the working classes upon society. For stormy discussions about rights, it substitutes peaceable definition of duties. It supersedes useless disputes for the possession of power, by enquiring into the rules that should regulate its wise employment.

Spontaneous tendencies of the people in a right direction. Their Communism.

A superficial observer of the present state of things might imagine our working classes to be as yet very far from this frame of mind. But he who looks deeper into the question will see that the very experiment which they are now trying, of extending their political rights, will soon have the effect of showing them the hollowness of a remedy which has so slight a bearing upon the objects really important to them. Without making any formal abdication of rights, which might seem inconsistent with their social dignity, there is little doubt that their instinctive sagacity will lead them to the still more efficacious plan of indifference. Positivism will readily convince them that whereas spiritual power, in order to do its work, must ramify in every direction, it is essential to public order that political power should be as a rule concentrated. And this conviction will grow upon them, as they see more clearly that the primary social problems which are very properly absorbing their attention are essentially moral rather than political.

One step in this direction they have already taken of their own accord, though its importance has not been duly appreciated. The well-known scheme of Communism, which has found such rapid acceptance with them, serves, in the absence of sounder doctrine, to express the way in which they are now looking at the great social problem. The experience of the first part of the Revolution has not yet wholly disabused them of political illusions, but it has at least brought them to feel that Property

is of more importance than Power in the ordinary sense of the word. So far Communism has given a wider meaning to the great social problem, and has thereby rendered an essential service, which is not neutralised by the temporary dangers involved in the metaphysical forms in which it comes before us. Communism should therefore be carefully distinguished from the numerous extravagant schemes brought forward in this time of spiritual anarchy; a time which stimulates incompetent and ill-trained minds to the most difficult subjects of thought. The foolish schemes referred to have so few definite features, that we have to distinguish them by the names of their authors. But Communism bears the name of no single author, and is something more than an accidental product of anomalous circumstances. We should look upon it as the natural progress in the right direction of the revolutionary spirit; progress of a moral rather than intellectual kind. It is a proof that revolutionary tendencies are now concentrating themselves upon moral questions, leaving all purely political questions in the background. It is quite true that the solution of the problem which Communists are now putting forward, is still as essentially political as that of their predecessors; since the only mode by which they propose to regulate the employment of property, is by a change in the mode of its tenure. Still it is owing to them that the question of property is at last brought forward for discussion: and it is a question which so evidently needs a moral solution, the solution of it by political means is at once so inadequate and so destructive, that it cannot long continue to be debated without leading to the more satisfactory result offered by Positivism. Men will see that it forms a part of the final regeneration of opinion and of life, which Positivism is now inaugurating.

To do justice to Communism, we must look at the generous sympathies by which it is inspired, not at the shallow theories in which those sympathies find expression provisionally, until circumstances enable them to take some other shape. The workmen connected with the Communist utopia, caring but very little for metaphysical principles, do not attach nearly the same importance to these theories as is done by men of literary education. As soon as they see a better way of bringing forward the points on which they have such legitimate claims, they will very soon adopt the clear and practical conceptions of Positivism,

which can be carried out peaceably and permanently, in preference to these vague and confused chimeras, which, as they will instinctively feel, lead only to anarchy. Till then they will naturally abide by Communism, as the only method of bringing forward the most fundamental of social problems in a way which there shall be no evading. The very alarm aroused by these proposed solutions of the problem helps to stir public attention, and fix it on this great subject. But for this constant appeal to their fears, the metaphysical delusions and aristocratic self-seeking of the governing classes would shelve the question altogether, or pass it by with indifference. And even when the mistakes of Communists have been rectified, it does not follow that they should give up the name, which is a simple assertion of the paramount importance of Social Feeling. However, now that we have happily passed from monarchy to republicanism, the name of *Communist* is no longer indispensable; the word *Republican* expresses the meaning as well, and without the same danger. Positivism, then, has nothing to fear from Communism; on the contrary, it will probably be accepted by most of the Communist workmen, especially in France, where abstractions have but little influence on minds thoroughly emancipated from theology. The people will gradually find that the solution of the great social problem which Positivism offers is better than the Communistic solution.

Its new title of Socialism.

A tendency in this direction has already shown itself since the first edition of this work was published. French workmen have now adopted a new expression, *Socialism*, thus indicating that they accept the problem of the Communists while rejecting their solution. Indeed that solution would seem to be finally disposed of by the voluntary exile of their leader. Yet, if the Socialists at present keep clear of Communism, it is only because their position is one of criticism or inaction. If they were to succeed to power, with principles so far below the level of their sympathies, they would inevitably fall into the same errors and extravagances which they now instinctively feel to be wrong. Consequently the rapid spread of Socialism very naturally alarms the upper classes; and their resistance, blind though it be, is at present the only legal guarantee for material order. In fact, the problem brought forward by the Communists admits of no solution but their own, so long as the revolutionary confusion of temporal and spiritual power continues. Therefore the uni-

versal blame that is lavished on these utopian schemes cannot fail to lead men towards Positivism, as the only doctrine which can preserve Western Europe from some serious attempt to bring Communism into practical operation. Positivists stand forward now as the party of construction, with a definite basis for political action; namely, systematic prosecution of the wise attempt of mediæval statesmen to separate the two social powers. On this basis they are enabled to satisfy the poor, and at the same time to restore the confidence of the rich. It is a final solution of our difficulties which will make the titles of which we have been speaking unnecessary. Stripping the old word *Republican* of any false meaning at present attached to it, we may retain it as the best expression of the social sympathies on which the regeneration of society depends. For the opinions, manners, and even institutions of future society, *Positivist* is the only word suitable.

Property is in its nature social, and needs control.

The peculiar reality of Positivism, and its invariable tendency to concentrate our intellectual powers upon social questions, form a twofold reason for its presentation in a systematic form of the spontaneous principle of Communism; namely, that Property is in its nature social, and that it needs control.

Property has been erroneously represented by most modern jurists as conferring an absolute right upon the possessor, irrespectively of the good or bad use made of it. The instinctive objection of workmen to this view is shared by all true philosophers. It is an anti-social theory, due historically to exaggerated reaction against previous legislation of a peculiarly oppressive kind, but it has no real foundation either in justice or in fact. Property can neither be created, nor even transmitted by the sole agency of its possessor. Since the co-operation of the public is always necessary, whether in the assertion of the general principle or in its special application, the tenure of property cannot be regarded as purely individual. In every age and in every country the state has intervened, to a greater or less degree, making property subservient to social requirements. Taxation evidently gives the public an interest in the private fortune of each individual: an interest which, instead of diminishing with the progress of civilisation, has been always on the increase, especially in modern times, now that the connection of each member of society with the whole is becoming more apparent. The practice of confiscation, which also is in

universal use, shows that in certain extreme cases the commu nity considers itself authorised to assume entire possession of private property. Confiscation has, it is true, been abolished for a time in France. But this isolated exception is due only to the abuses which recently accompanied the exercise of what was in itself an undoubted right; and it will hardly survive when the causes which led to it are forgotten, and the power which introduced it has passed away. In their abstract views of property, then, Communists are perfectly able to maintain their ground against the jurists.

They are right, again, in dissenting as deeply as they do from the Economists, who lay it down as an absolute principle that the application of wealth should be entirely unrestricted by society. This error, like the one just spoken of, is attributable to instances of unjustifiable interference. But it is utterly opposed to all sound philosophical teaching, although it has a certain appearance of truth, in so far as it recognises the sub-ordination of social phenomena to natural laws. But the Economists seem to have adopted this important principle only to show how incapable they are of comprehending it. Before they applied the conception of Law to the higher phenomena of nature, they ought to have made themselves well acquainted with its meaning, as applied to the lower and more simple phenomena. Not having done so, they have been utterly blind to the fact that the Order of nature becomes more and more modifiable as it grows more complicated. This conception lies at the very root of our whole practical life; therefore nothing can excuse the metaphysical school of Economists for syste-matically resisting the intervention of human wisdom in the various departments of social action. That the movement of society is subject to natural laws is certain; but this truth, instead of inducing us to abandon all efforts to modify society, should rather lead to a wiser application of such efforts, since they are at once more efficacious and more necessary in social phenomena than in any other.

So far, therefore, the fundamental principle of Communism is one which the Positivist school must obviously adopt. Positivism not only confirms this principle, but widens its scope, by showing its application to other departments of human life; by insisting that, not wealth only, but that all our powers shall be devoted in the true republican spirit to the continuous

service of the community. The long period of revolution which has elapsed since the Middle Ages has encouraged individualism in the moral world, as in the intellectual it has fostered the specialising tendency. But both are equally inconsistent with the final order of modern society. In all healthy conditions of Humanity, the citizen, whatever his position, has been regarded as a public functionary, whose duties and claims were determined more or less distinctly by his faculties. The case of property is certainly no exception to this general principle. Proprietorship is regarded by the Positivist as an important social function; the function, namely, of creating and administering that capital by means of which each generation lays the foundation for the operations of its successor. This is the only tenable view of property; and wisely interpreted, it is one which, while ennobling to its possessor, does not exclude a due measure of freedom. It will in fact place his position on a firmer basis than ever.

But Positivism rejects the Communist solution of the problem. Property is to be controlled by moral not legal agencies.

But the agreement here pointed out between sociological science and the spontaneous inspirations of popular judgment, goes no farther. Positivists accept, and indeed very much enlarge, the programme of Communism; but we reject its practical solution on the ground that it is at once inadequate and subversive. The chief difference between our own solution and theirs is that we substitute moral agencies for political. Thus we come again to our leading principle of separating spiritual from temporal power; a principle which, disregarded as it has hitherto been in the system of modern renovators, will be found in every one of the important problems of our time to be the sole possible issue. In the present case, while throwing such light on the fallacy of Communism, it should lead us to excuse the fallacy, by reminding us that politicians of every accredited school are equally guilty of it. At a time when there are so very few, even of cultivated minds, who have a clear conception of this the primary principle of modern politics, it would be harsh to blame the people for still accepting a result of revolutionary empiricism, which is so universally adopted by other classes.

I need not enter here into any detailed criticism of the utopian scheme of Plato. It was conclusively refuted twenty-two centuries ago, by the great Aristotle, who thus exemplified the organic character, by which, even in its earliest manifesta-

tions, the Positive spirit is distinguished. In modern Communism, moreover, there is one fatal inconsistency, which while it proves the utter weakness of the system, testifies at the same time to the honourable character of the motives from which it arose. Modern Communism differs from the ancient, as expounded by Plato, in not making women and children common as well as property; a result to which the principle itself obviously leads. Yet this, the only consistent view of Communism, is adopted by none but a very few literary men, whose affections, in themselves too feeble, have been perverted by vicious intellectual training. Our untaught proletaries, who are the only Communists worthy our consideration, are nobly inconsistent in this respect. Indivisible as their erroneous system is, they only adopt that side of it which touches on their social requirements, energetically repudiating the other aspect as offensive to all their highest instincts.

Without discussing these chimerical schemes in detail, it will be well to expose the errors inherent in the method of reasoning which leads to them, because they are common to all the other progressive schools, the Positivist school excepted. The mistake consists in the first place, in disregarding or even denying the natural laws which regulate social phenomena; and secondly, in resorting to political agencies where moral agency is the real thing needed. The inadequacy and the danger of the various utopian systems which are now setting up their rival claims to bring about the regeneration of society, are all attributable in reality to these two closely-connected errors. For the sake of clearness, I shall continue to refer specially to Communism as the most prominent of these systems. But it will be easy to extend the bearing of my remarks to all the rest.

Individualisation of functions as necessary as co-operation.

The ignorance of the true laws of social life under which Communists labour is evident in their dangerous tendency to suppress individuality. Not only do they ignore the inherent preponderance in our nature of the personal instincts; but they forget that, in the collective Organism, the separation of functions is a feature no less essential than the co-operation of functions. Suppose for a moment that the connection between men could be made such that they were physically inseparable, as has been actually the case with twins in certain cases of monstrosity; society would obviously be impossible. Extrava-

gant as this supposition is, it may illustrate the fact that in social life individuality cannot be dispensed with. It is necessary in order to admit of that variety of simultaneous efforts which constitutes the immense superiority of the Social Organism over every individual life. The great problem for man is to harmonise, as far as possible, the freedom resulting from isolation, with the equally urgent necessity for convergence. To dwell exclusively upon the necessity of convergence would tend to undermine not merely our practical energy, but our true dignity; since it would do away with the sense of personal responsibility. In exceptional cases where life is spent in forced subjection to domestic authority, the comforts of home are often not enough to prevent existence from becoming an intolerable burden, simply from the want of sufficient independence. What would it be, then, if everybody stood in a similar position of dependence towards a community that was indifferent to his happiness? Yet no less a danger than this would be the result of adopting any of those utopian schemes which sacrifice true liberty to uncontrolled equality, or even to an exaggerated sense of fraternity. Wide as the divergence between Positivism and the Economic schools is, Positivists adopt substantially the strictures which they have passed upon Communism; especially those of Dunoyer, their most advanced writer.

Industry requires its captains as well as War.

There is another point in which Communism is equally inconsistent with the laws of Sociology. Acting under false views of the constitution of our modern industrial system, it proposes to remove its directors, who form so essential a part of it. An army can no more exist without officers than without soldiers; and this elementary truth holds good of Industry as well as of War. The organisation of modern industry has not been found practicable as yet; but the germ of such organisation lies unquestionably in the division which has arisen spontaneously between Capitalist and Workman. No great works could be undertaken if each worker were also to be a director, or if the management, instead of being fixed, were entrusted to a passive and irresponsible body. It is evident that under the present system of industry there is a tendency to a constant enlargement of undertakings: each fresh step leads at once to still further extension. Now this tendency, so far from being opposed to the interests of the

working classes, is a condition which will most seriously facilitate the real organisation of our material existence, as soon as we have a moral authority competent to control it. For it is only the larger employers that the spiritual power can hope to penetrate with a strong and habitual sense of duty to their subordinates. Without a sufficient concentration of material power, the means of satisfying the claims of morality would be found wanting, except at such exorbitant sacrifices, as would be soon found incompatible with all industrial progress. This is the weak point of every plan of reform which limits itself to the mode of acquiring power, whether public power or private, instead of aiming at controlling its use in whosever hands it may be placed. It leads to a waste of those forces which, when rightly used, form our principal resource in dealing with grave social difficulties.

Communism is deficient in the historical spirit.

The motives, therefore, from which modern Communism has arisen, however estimable, lead at present, in the want of proper scientific teaching, to a very wrong view both of the nature of the disease and of its remedy. A heavier reproach against it is that in one point it shows a manifest insufficiency of social instinct. Communists boast of their spirit of social union: but they limit it to the union of the present generation, stopping short of historical continuity, which yet is the principal characteristic of Humanity. When they have matured their moral growth, and have followed out in Time that connection which at present they only recognise in Space, they will at once see the necessity of these general conditions which at present they would reject. They will understand the importance of inheritance, as the natural means by which each generation transmits to its successor the result of its own labours and the means of improving them. The necessity of inheritance, as far as the community is concerned, is evident, and its extension to the individual is an obvious consequence. But whatever reproaches Communists may deserve in this respect are equally applicable to all the other progressive sects. They are all pervaded by an anti-historic spirit, which leads them to conceive of Society as though it had no ancestors; and this, although their own ideas for the most part can have no bearing except upon posterity.

In fact, as a system, it is worthless,

Serious as these errors are, a philosophic mind will treat the Communism of our day, so far as it is adopted in good

faith, with indulgence, whether he look at the motives from which it arose, or at the practical results which will follow from it. It is hardly fair to criticise the intrinsic merits of a doctrine, the whole meaning and value of which are relative to the peculiar phase of society in which it is proposed. Communism has in its own way discharged an important function. It has brought prominently forward the greatest of social problems; and, if we except the recent Positivist explanation, its mode of stating it has never been surpassed. And let no one suppose that it would have been enough simply to state the problem, without any such dangerous solution as is here offered. Those who think so do not understand the exigencies of man's feeble intellect. In far easier subjects than this, it is impossible to give prolonged attention to questions which are simply asked, without any attempt to answer them. Suppose, for instance, that Gall and Broussais had limited themselves to a simple statement of their great problems without venturing on any solution; their principles, however incontestable, would have been barren of result, for want of the renovating impulse which nothing can give but a systematic solution of some kind or other, hazardous as the attempt must be at first. Now it is hardly likely that we should be able to evade this condition of our mental faculties in subjects which are not only of the highest difficulty, but also more exposed than any others to the influence of passion. Besides, when we compare the errors of Communism with those of other social doctrines which have recently received official sanction, we shall feel more disposed to palliate them. Are they, for instance, more shallow and more really dangerous than the absurd and chimerical notion which was accepted in France for a whole generation, and is still upheld by so many political teachers; the notion that the great Revolution has found its final issue in the constitutional system of government, a system peculiar to England during her stage of transition? Moreover, our so-called conservatives only escape the errors of Communism by evading or ignoring its problems, though they are becoming every day more urgent. Whenever they are induced to deal with them, they render themselves liable to exactly the same dangers, dangers common to all schools which reject the division of the two powers, and which consequently are for ever trying to make legislation do the work of morality. Accord-

though prompted by noble feelings.

ingly we see the governing classes now-a-days upholding institutions of a thoroughly Communist character, such as alms-houses, foundling hospitals, &c.; while popular feeling strongly and rightly condemns such institutions, as being incompatible with that healthy growth of home affection which should be common to all ranks.

Were it not that Communism is provisionally useful in antagonising other doctrines equally erroneous, it would have then, no real importance, except that due to the motives which originated it; since its practical solution is far too chimerical and subversive ever to obtain acceptance. Yet, from the high morality of these motives, it will probably maintain and increase its influence until our working men find that their wants can be more effectually satisfied by gentler and surer means. Our republican system seems at first sight favourable to the scheme; but it cannot fail soon to have the reverse effect, because, while adopting the social principle which constitutes the real merit of Communism, it repudiates its mischievous illusions. In France at all events, where property is so easy to acquire, and is consequently so generally enjoyed, the doctrine cannot lead to much practical harm; rather its reaction will be beneficial, because it will fix men's minds more seriously on the just claims of the People. The danger is far greater in other parts of Western Europe, especially in England, where aristocratic influence is less undermined, and where consequently the working classes are less advanced and more oppressed. And even in Catholic countries, where individualism and anarchy have been met by a truer sense of fraternity, Communistic disturbances can only be avoided finally by a more rapid dissemination of Positivism, which will ultimately dispel all social delusions, by establishing the true solution of the questions that gave rise to them.

The nature of the evil shows us at once that the remedy we seek must be almost entirely of a moral kind. This truth, based as it is on real knowledge of human nature, the people will soon come to feel instinctively. And here Communists are, without knowing it, preparing the way for the ascendancy of Positivism. They are forcing upon men's notice in the strongest possible way a problem to which no peaceable and satisfactory solution can be given, except by the new philosophy.

Property is a public trust, not to be

That philosophy, disregarding all useless and irritating discussions as to the origin of wealth and the extent of its pos-

session, proceeds at once to the moral rules which should regulate it as a social function. The distribution of power among men, of material power especially, lies so far beyond our means of intervention, that to set it before us as our main object to rectify the defects of the natural order in this respect, would be to waste our short life in barren and interminable disputes. The chief concern of the public is that power, in whosever hands it may be placed, should be exercised for their benefit; and this is a point to which we may direct our efforts with far greater effect. Besides, by regulating the employment of wealth, we do, indirectly, modify its tenure; for the mode in which wealth is held has some secondary influence over the right use of it.

interfered with legally.

The regulations required should be moral, not political, in their source; general, not special, in their application. Those who accept them will do so of their own free will, under the influence of their education. Thus their obedience, while steadily maintained, will have, as Aristotle long ago observed, the merit of voluntary action. By converting private property into a public function, we would subject it to no tyrannical interference; for this, by the destruction of free impulse and responsibility would prove most deeply degrading to man's character. Indeed, the comparison of proprietors with public functionaries will frequently be applied in the inverse sense; with the view, that is, of strengthening the latter rather than of weakening the former. The true principle of republicanism is, that all forces should work together for the common good. With this view we have on the one hand to determine precisely what it is that the common good requires; and on the other, to develope the temper of mind most likely to satisfy the requirement. The conditions requisite for these two objects, are a recognised code of principles, an adequate education, and a healthy direction of public opinion. For such conditions we must look principally to the philosophic body which Positivism proposes to establish at the apex of modern society. Doubtless this purely moral influence would not be sufficient of itself. Human frailty is such that Government in the ordinary sense of the word, will have as before, to repress by force the more palpable and more dangerous class of delinquencies. But this additional control, though necessary, will not fill so important a place as it did in the Middle Ages under the sway of Catholi-

cism. Spiritual rewards and punishments will preponderate over temporal, in proportion as human development evokes a stronger sense of the ties which unite each with all by the threefold bond of Feeling, Thought, and Action.

Inheritance favourable to its right employment.

Positivism being more pacific and more efficacious than Communism, because more true, is also broader and more complete in its solution of great social problems. The superficial view of property, springing too often from envious motives, which condemns Inheritance because it admits of possession without labour, is not subversive merely, but narrow. From the moral point of view we see at once the radical weakness of these empirical reproaches. They show blindness to the fact that this mode of transmitting wealth is really that which is most likely to call out the temper requisite for its right employment. It saves the mind and the heart from the mean and sordid habits which are so often engendered by slow accumulation of capital. The man who is born to wealth is more likely to feel the wish to be respected. And thus those whom we are inclined to condemn as idlers may very easily become the most useful of the rich classes, under a wise reorganisation of opinions and habits. Of course too, since with the advance of Civilisation the difficulty of living without industry increases, the class that we are speaking of becomes more and more exceptional. In every way, then, it is a most serious mistake to wish to upset society on account of abuses which are already in course of removal, and which admit of conversion to a most beneficial purpose.

Intellect needs moral control as much as wealth.

Again, another feature in which the Positivist solution surpasses the Communist, is the remarkable completeness of its application. Communism takes no account of anything but wealth; as if wealth were the only power in modern society badly distributed and administered. In reality there are greater abuses connected with almost every other power that man possesses; and especially with the powers of intellect; yet these our visionaries make not the smallest attempt to rectify. Positivism being the only doctrine that embraces the whole sphere of human existence, is therefore the only doctrine that can elevate Social Feeling to its proper place, by extending it to all departments of human activity without exception. Identification, in a moral sense, of private functions with public duties is even more necessary in the case of the scientific man or the artist, than in that of the proprietor; whether we look

at the source from which his powers proceed or at the object to which they should be directed. Yet the men who wish to make material wealth common, the only kind of wealth that can be held exclusively by an individual, never extend their utopian scheme to intellectual wealth, in which it would be far more admissible. In fact the apostles of Communism often come forward as zealous supporters of what they call literary property. Such inconsistencies show the shallowness of the system; it proclaims its own failure in the very cases that are most favourable for its application. The extension of the principle here suggested would expose at once the inexpediency of political regulations on the subject, and the necessity of moral rules; for these and these only can ensure the right use of all our faculties without distinction. Intellectual effort, to be of any value, must be spontaneous; and it is doubtless an instinctive sense of this truth which prevents Communists from subjecting intellectual faculties to their utopian regulations. But Positivism can deal with these faculties, which stand in the most urgent need of wise direction, without inconsistency and without disturbance. It leaves to them their fair measure of free action; and in the case of other faculties which, though less eminent, are hardly less dangerous to repress, it strengthens their freedom. When a pure morality arises capable of impressing a social tendency upon every phase of human activity, the freer our action becomes the more useful will it be to the public. The tendency of modern civilisation, far from impeding private industry, is to entrust it more and more with functions, especially with those of a material kind, which were originally left to government. Unfortunately this tendency, which is very evident, leads economists into the mistake of supposing that industry may be left altogether without organisation. All that it really proves is that the influence of moral principles is gradually preponderating over that of governmental regulations.

Action of organised public opinion upon Capitalists; Strikes.

The method which is peculiar to Positivism of solving our great social problems by moral agencies, will be found applicable also to the settlement of industrial disputes, so far as the popular claims involved are well founded. These claims will thus become clear from all tendency to disorder, and will consequently gain immensely in force; especially when they are seen to be consistent with principles which are freely accepted by all, and when they are supported by a philosophic body of

known impartiality and enlightenment. This spiritual power, while impressing on the people the duty of respecting their temporal leaders, will impose duties upon these latter, which they will find impossible to evade. As all classes will have received a common education, they will all alike be penetrated with the general principles on which these special obligations will rest. And these weapons, derived from no source but that of feeling and reason, and aided solely by public opinion, will wield an influence over practical life, of which nothing in the present day can give any conception. We might compare it with the influence of Catholicism in the Middle Ages, only that men are too apt to attribute the results of Catholicism to the chimerical hopes and fears which it inspired, rather than to the energy with which praise and blame were distributed. With the new spiritual power praise and blame will form the only resource; but it will be developed and consolidated to a degree which, as I have before shown, was impossible to Catholicism.

This is the only real solution of the disputes that are so constantly arising between workmen and their employers. Both parties will look to this philosophic authority as a supreme court of arbitration. In estimating its importance, we must not forget that the antagonism of employer and employed has not yet been pushed to its full consequences. The struggle between wealth and numbers would have been far more serious, but for the fact that combination, without which there can be no struggle worth speaking of, has hitherto only been permitted to the capitalist. It is true that in England combinations of workmen are not legally prohibited. But in that country they are not yet sufficiently emancipated, either intellectually or morally, to make such use of the right as would be the case in France. When French workmen are allowed to concert their plans as freely as their employers, the antagonism of interests that will then arise will make both sides feel the need of a moral power to arbitrate between them. Not that the conciliating influence of such a power will ever be such as to do away entirely with extreme measures; but it will greatly restrict their application, and also will mitigate its harshness. Such measures should be limited on both sides to refusal of co-operation; a power which every free agent ought to be allowed to exercise, on his own personal responsibility, with the object of impressing on those who are treating him unjustly the importance of the

services which he has been rendering. The workman is not to be compelled to work any more than the capitalist to direct. Any abuse of this extreme protest on either side will of course be disapproved by the moral power; but the option of making the protest is always to be reserved to each element in the collective organism, by virtue of his natural independence. In the most settled times functionaries have always been allowed to suspend their services on special occasions. It was done frequently in the Middle Ages by priests, professors, judges, etc. All we have to do is to regulate this right, and embody it into the industrial system. This will be one of the secondary duties of the philosophic body, who will naturally be consulted on most of these occasions, as on all others of public or private moment. The formal sanction or positive order which it may give for a suspension of work, will render that measure far more effective than it is at present. The operation of the measure is but partial at present, but it might in this way extend, first to all who belong to the same trade, then to other branches of industry, and even ultimately to every Western nation that accepts the same spiritual guides. Of course persons who think themselves aggrieved may always resort to this extreme course on their own responsibility, against the advice of the philosophic body. True spiritual power confines itself to giving counsel: it never commands. But in such cases, unless the advice given by the philosophers has been wrong, the suspension of work is not likely to be sufficiently general to bring about any important result.

This theory of trade-unions is, in fact, in the industrial world, what the power of insurrection is with regard to the higher social functions; it is an ultimate resource which every collective organism must reserve. The principle is the same in the simpler and more ordinary cases as in the more unusual and important. In both the intervention of the philosophic body, whether solicited or not, whether its purpose be to organise legitimate but empirical efforts or to repress them, will largely influence the result.

We are now in a position to state with more precision the main practical difference between the policy of Positivism, and that of Communism or of Socialism. All progressive political schools agree in concentrating their attention upon the problem, How to give the people their proper place as a component

element of modern Society, which ever since the Middle Ages has been tending more and more distinctly to its normal mode of existence. They also agree that the two great requirements of the working classes are, the organisation of Education, and the organisation of Labour. But here their agreement ends. When the means of effecting these two objects have to be considered, Positivists find themselves at issue with all other progressive schools. They maintain that the organisation of Industry must be based upon the organisation of Education, whereas it is commonly supposed that both may be begun simultaneously, or indeed that Labour may be organised irrespectively of Education. It may seem as if we are making too much of a mere question of arrangement; yet the difference is one which affects the whole character and method of social reconstruction. The plan usually followed is simply a repetition of the old attempt to reconstruct politically, without waiting for spiritual reconstruction: in other words, to raise the social edifice before its intellectual and moral foundations have been laid. Hence the attempts made to satisfy popular requirements by measures of a purely political kind, because they appear to meet the evil directly; a course as useless as it is destructive. Positivism, on the contrary, substitutes for such agencies an influence which is sure and peaceful, although it be gradual and indirect; the influence of a more enlightened morality, supported by a purer state of Public Opinion; such opinion being organised by competent minds, and diffused freely amongst the people. In fact, the whole question, whether the solution of the twofold problem before us is to be empirical, revolutionary, and therefore confined simply to France; or whether it is to be consistent, pacific, and applicable to the whole of Western Europe, depends upon the precedence or the postponement of the organisation of Labour to the organisation of Education.

Public opinion must be based upon a sound system of education.

This conclusion involves a brief explanation of the general system of education which Positivism will introduce, as the principal function of the new spiritual power, and its most efficient instrument for satisfying the working classes in all reasonable demands.

It was the great social virtue of Catholicism, that it introduced for the first time, as far as circumstances permitted, a system of education common to all classes without distinction, not excepting even those who were still slaves. It was a vast

undertaking, yet essential to its purpose of founding a spiritual power which was to be independent of the temporal power. Apart from its temporary value, it has left us one imperishable principle, namely that in all education worthy of the name, moral training should be regarded as of greater importance than scientific teaching. Catholic education, however, was of course extremely defective; owing partly to the circumstances of the time, and partly to the weakness of the doctrine on which it rested. Having reference almost exclusively to the oppressed masses, the principal lesson which it taught was the duty of almost passive resignation, with the exception of certain obligations imposed upon rulers. Intellectual culture in any true sense there was none. All this was natural in a faith which directed men's highest efforts to an object unconnected with social life, and which taught that all phenomena were regulated by an impenetrable Will. Catholic Education was consequently quite unsuited to any period but the Middle Ages; a period during which the advanced portion of Humanity was gradually ridding itself of the ancient institution of slavery, by commuting it first into serfdom, as a preliminary step to entire personal freedom. In the ancient world Catholic education would have been too revolutionary; at the present time it would be servile and inadequate. Its sole function was that of directing the long and difficult transition from the social life of Antiquity to that of Modern times. Personal emancipation once obtained, the working classes began to develope their powers and rise to their true position as a class; and they soon became conscious of intellectual and social wants which Catholicism was wholly incapable of satisfying.

And yet this is the only real system of universal education which the world has hitherto seen. For we cannot give that name to the so-called University system which metaphysicians began to introduce into Europe at the close of the Middle Ages, and which was a mere extension of the special instruction previously given to the priesthood; that is, the study of the Latin language, with the dialectical training required for the defence of their doctrines. Morals were untaught except as a part of the training of the professed theologian. All this metaphysical and literary instruction was of no great service to modern progress, except so far as it developed the critical power; it had, however, a certain indirect influence on the constructive move-

ment, especially on the development of Art. But its defects, both practical and theoretical, have been made more evident by its application to new classes of society, whose occupations, whether practical or speculative, required a very different kind of training. And thus, while claiming the title of Universal, it never reached the working classes, even in Protestant countries, where each believer became to a certain extent his own priest.

The theological method being obsolete, and the metaphysical method inadequate, the task of founding an efficient system of popular education belongs to Positivism; the only doctrine capable of reconciling those two orders of conditions, the intellectual and the moral, which are equally necessary, but which since the Middle Ages have always proved incompatible. Positivist education, while securing the supremacy of the heart over the understanding more efficiently than Catholicism, will yet put no obstacle in the way of intellectual growth. The function of intellect, in education as in practical life, will be to regulate Feeling; the culture of which, beginning at birth, will be maintained by constant exercise of the three classes of duties relative to Self, to the Family, and to Society.

I have already explained the mode in which the principles of universal morality will be finally co-ordinated; this being the principal service to be rendered by the new spiritual power. I have now only to point out the paramount influence of morality in every part of Positive Education. It will be seen to be connected at first spontaneously, and afterwards in a more systematic form, with the entire system of Human knowledge.

Positive Education, adapting itself to the requirements of the Organism with which it has to deal, subordinates intellectual conditions to social; regarding the latter as the end, the former as simply the means. Its principal aim is to induce the working classes to accept their high social function of supporting the spiritual power, while at the same time it will render them more efficient in their own special duties.

Education has two stages; from birth to puberty, from puberty to adolescence. The first, consisting of physical and esthetic

Presuming that Education extends from birth to manhood, we may divide it into two periods, the first ending with puberty, that is, at the beginning of industrial apprenticeship. Education here should be essentially spontaneous, and should be carried on as far as possible in the bosom of the family, the only studies required, being those connected with esthetic cul-

ture. In the second period, Education takes a systematic form, consisting chiefly of a public course of scientific lectures upon the essential laws of the various orders of phenomena. This course will be the grand work of a moral system, co-ordinating the whole, and pointing out the relation of each part to the social purpose common to all. Thus, at about the time which long experience has fixed as that of legal majority, and when in most cases the term of apprenticeship closes, the workman will be prepared intellectually and morally for his public and private service.

training, to be given at home.

The first years of life, from infancy to the end of the period of second dentition, should be devoted to education of the physical powers, carried on under the superintendence of the parents, especially of the mother. Physical education, as usually practised, is nothing but mere muscular exercise; but a more important object is that of training the senses, and giving manual skill, so as to develope from the very first our powers of observation and action. Study, in the ordinary acceptation, there should be none during this period, not even reading or writing. An acquaintance with facts of various kinds, such as may spontaneously attract the growing powers of attention, will be the only instruction received. The philosophic system of the infant individual, like that of the infant species, consists in pure Fetichism, and its natural development should not be disturbed by unwise interference. The only care of the parents will be to impress those prepossessions and habits for which a rational basis will be given at a later period. By taking every opportunity of calling the higher instincts into play, they will be laying down the best foundation for true morality.

During the period of about seven years comprised between the second dentition and puberty, Education will become somewhat more systematic; but it will be limited to the culture of the fine arts; and it will be still most important, especially on moral grounds, to avoid separation from the family. The study of Art should simply consist in practising it more or less systematically. No formal lectures are necessary, at least for the purposes of general education, and apart from the requirements of special professions. There is no reason why these studies should not be carried on at home by the second generation of Positivists, when the culture of the parents will be sufficiently

advanced to allow them to superintend it. They will include Poetry, the art on which all the rest are based; and the two most important of the special arts, music and drawing. Familiarity with the principal Western languages will be involved in the study of poetry, since it cannot be properly appreciated without them. Moreover, independently of esthetic considerations, a knowledge of them is most important morally, as a means of destroying national prejudices, and of forming the true Positivist standard of Occidental feeling. Each nation will be taught to consider it a duty to learn the language of contiguous countries; an obvious principle, which, in the case of Frenchmen, will involve their learning all the other four languages, as a consequence of that central position which gives them so many advantages. When this rule becomes general, and the natural affinities of the five advanced nations are brought fully into play, a common Occidental language will not be long in forming itself spontaneously, without the aid of any metaphysical scheme for producing a language that shall be absolutely universal.

During the latter portion of primary Education, devoted to the culture of the imaginative powers, the philosophic development of the individual, corresponding to that of the race, will carry him from the simple Fetichism with which he began to the stage of Polytheism. This resemblance between the growth of the individual and that of society has always shown itself more or less, in spite of the irrational precautions of Christian teachers. They have never been able to give children a distaste for those simple tales of fairies and genii, which are natural to this phase. Positivist education allows free scope to this tendency, without however encouraging any hypocrisy on the part of the parents, or necessitating any subsequent contradiction. The simple truth is enough. The child may be told that these spontaneous beliefs are but natural to his age, but that they will gradually lead him on to others, by the fundamental law of all human development. Language of this kind will not only have the advantage of familiarising him with a great principle of Positivism, but will stimulate the nascent sense of sociability, by leading him to sympathise with the various nations who still remain at his own primitive stage of intellectual development.

The second part consists

The second part of Positivist Education cannot be con-

ducted altogether at home, since it involves public lectures, in which of course the part taken by the parent can be only accessory. But this is no reason for depriving the pupil of the advantages of family life; it remains as indispensable as ever to his moral development, which is always to be the first consideration. It will be easy for him to follow the best masters without weakening his sense of personal and domestic morality, which is the almost inevitable result of the monastic seclusion of modern schools. The public-school system is commonly thought to compensate for these disadvantages, by the knowledge of the world which it gives; but this is better obtained by free intercourse with society, where sympathies are far more likely to be satisfied. Recognition of this truth would do much to facilitate and improve popular education: and it applies to all cases, except perhaps to some special professions, where seclusion of the pupils may still be necessary, though even in these cases probably it may be ultimately dispensed with.

of public lectures on the Sciences, from Mathematics to Sociology.

The plan to be followed in this period of education, will obviously be that indicated by the encyclopædic law of Classification, which forms part of my Theory of Development. Scientific study, whether for the working man or the philosopher, should begin with the inorganic world around us, and then pass to the subject of human nature, individual and social; since our ideas on these two subjects form the basis of our practical action. The first class of studies, as I have stated before, includes four sciences which we may arrange in couples: Mathematics and Astronomy forming the first; Physics and Chemistry the second. To each of these couples, two years may be given. But as the first ranges over a wide field, and is of greater logical importance, it will require two lectures weekly; whereas, for all the subsequent studies one lecture will be sufficient. Besides, during these two years, the necessities of practical life will not press heavily, and more time may fairly be spent in mental occupation. From the study of inorganic science, the pupil will proceed to Biology: this subject may easily be condensed in the fifth year into a series of forty lectures, without really losing either its philosophic or its popular character. This concludes the introductory part of Education. The student will now in the sixth year co-ordinate all his previous knowledge by the direct study of

Sociology, statically and dynamically viewed. On this subject also forty lectures will be given, in which the structure and growth of human societies, especially those of modern times, will be clearly explained. With this foundation we come to the last of the seven years of pupillage, in which the great social purpose of the scheme is at last reached. It will be devoted to a systematic exposition of Moral Science, the principles of which may be now fully understood by the light of the knowledge previously obtained of the World, of Life, and of Humanity.

During this course of study, part of the three unoccupied months of each year will be spent in public examinations, to test the degree to which the instruction has been assimilated. A very small amount of encouragement wisely given will induce the pupils to continue their esthetic pursuits voluntarily. During the last two years the Latin and Greek languages might be acquired, as an accessory study completing the poetic culture of the young workman, and throwing light on the historical and moral questions with which he will then be occupied. For the purposes of Art, Greek is the more useful; but in the second object, that of enabling us to realise our social Filiation, Latin is of even greater importance.

In the course of these seven years the philosophic development of the individual, preserving its correspondence with that of the race, will pass through its last phase. As the pupil passed before from Fetichism to Polytheism, so he will now pass, as spontaneously, into Monotheism, induced by the influence on his imaginative powers which hitherto have been supreme, of the spirit of discussion. No interference should be offered to this metaphysical transition, which is the natural way of rendering homage to the necessary conditions under which mankind arrives at truth. There is something in this provisional phase which evidently harmonises well with the abstract and independent character of Mathematics, with which the two first years of the seven are occupied. As long as more attention is given to deduction than to induction, the mind cannot but retain a leaning to metaphysical theories. Under their influence the student will soon reduce his primitive theology to Deism of a more or less distinct kind; and this during his physico-chemical studies will most likely degenerate into a species of Atheism; which last phase, under the enlight-

ening influence of biological and still more of sociological knowledge, will be finally replaced by Positivism. Thus at the time fixed for the ultimate study of moral science, each new member of Humanity will have been strongly impressed by personal experience, with a sense of historical Filiation, and will be enabled to sympathise with his ancestors and contemporaries, while devoting his practical energies to the good of his successors.

Travels of Apprentices.

There is an excellent custom prevalent among the working men of France and creditable to their good sense, with which our educational scheme seems at first sight incompatible. I refer to the custom of travelling from place to place during the last years of apprenticeship; which is as beneficial to their mind and character, as the purposeless excursions of our wealthy and idle classes are in most cases injurious. But there is no necessity for its interfering with study, since it always involves long residence in the chief centres of production, where the workman is sure to find annual courses of lectures similar to those which he would otherwise have been attending at home. As the structure and distribution of the philosophic body will be everywhere the same, there need be no great inconvenience in these changes. For every centre not more than seven teachers will be required; each of whom will take the whole Encyclopædic scale successively. Thus the total number of lecturers will be so small as to admit of a high standard of merit being everywhere attained, and of finding everywhere a fair measure of material support. So far from discouraging the travelling system, Positivism will give it a new character, intellectually and socially, by extending the range of travel to the whole of Western Europe, since there is no part of it in which the workman will not be able to prosecute his education, unhampered as he will then be by differences of language. Not only would the sense of fraternity among western nations be strengthened by such a plan, but great improvement would result esthetically. The languages of Europe would be learnt more thoroughly, and there would be a keener appreciation of works of art, whether musical, pictorial, or architectural; for these can never be properly appreciated but in the country which gave them birth.

Concentration of study.

Judging by our present practice, it would seem impossible to include such a mass of important scientific studies, as are

here proposed, in the seven years course of three hundred and sixty lectures. But the length to which similar courses now extend is owing partly to the special or professional object with which the course is given, and still more to the discursive and unphilosophical spirit of most of the teachers, under the present wretched conditions of scientific study. Its regeneration under the influence of a sound philosophy will inspire it with a social spirit, and thus give it a larger and more comprehensive tendency. Teachers will become more practised in the art of condensing, and their lectures will be far more substantial. They will not indeed be a substitute for voluntary effort, on which all the real value of teaching depends. Their aim will be rather to direct such effort. A striking example, which is not so well remembered as it should be, will help to explain my meaning. At the first opening of the Polytechnic School, courses of lectures were given, very appropriately named *Revolutionary Courses*, which concentrated the teaching of three years into three months. What was in that case an extraordinary anomaly, due to republican enthusiasm, may become the normal state when a moral power arises not inferior in energy, and yet based upon a consistent intellectual synthesis, of which our great predecessors of the Revolution could have no conception.

Little attention has hitherto been given to the didactic value of Feeling. Since the close of the Middle Ages, the heart has been neglected in proportion as the mind has been cultivated. But the characteristic principle of Positivism, is that the Intellect, whether acting spontaneously or under systematic direction, is subordinate to Social Feeling, is a principle as fertile in intellectual as in moral results. Throughout this course of popular education, parents and masters will seize every suitable occasion for calling Social Feeling into play; and the most abstruse subjects will often be vivified by its influence. The office of the mind is to strengthen and to cultivate the heart; the heart again should animate and direct the mental powers. This mutual influence of general views and generous feelings will have greater effect upon scientific study, from the esthetic culture previously given, in which such habits of mind will have been formed, as will give grace and beauty to the whole life.

Govern-mental

When I speak of this education as specially destined for the

people, I am not merely using words to denote its comprehensiveness and philosophic character. It is, in my opinion, the only education, with the exception of certain special branches, for which public organisation is needed. It should be looked on as a sacred debt which the republic owes to the working classes. But the claim does not extend to other classes, who can easily pay for any special instruction that they may require. Besides such instruction will be only a partial development of the more general teaching, or an application of it to some particular purpose. Therefore if the general training be sound, most people will be able to prosecute accessory studies by themselves. Apprenticeship to any business involves very little, except the practice of it. Even in the highest arts, no course of systematic instruction is necessary. The false views now prevalent on the subject are due to the unfortunate absence of all general education, since the decay of Catholicism. The special institutions founded in Europe during the last three centuries, and carefully remodelled in France by the Convention, are only valuable as containing certain germs of truth, which will be found indispensable when general education is being finally reorganised. But important as they may be from a scientific aspect, their practical utility, which seems to have been the motive for establishing them, is exceedingly doubtful. The arts which they were intended to promote could have done perfectly well without them. I include in these remarks such institutions as the Polytechnic School, the Museum of Natural History, etc. Their value, like that of all good institutions of the present unsettled time, is purely provisional. Viewed in this light, it may be useful to reorganise them by the help of a philosophy which, without any illusion as to their durability, will render them better adapted to their important temporary purpose. Indeed, there are some new institutions which it might be advisable to form; such, for instance, as a school of higher philology, the object of which would be to range all human languages according to their true affinities, thus compensating the suppression of Greek and Latin professorships, which is certainly an indispensable measure. But the whole of this provisional framework would no doubt disappear before the end of the nineteenth century, when a system of general education will have been thoroughly organised. The present necessity for a provisional system should lead to no

assistance not required, except for certain special institutions, and this only as a provisional measure.

misconception of its character and purpose. Working men are the only class who have a real claim upon the State for instruction; and this, if wisely organised, dispenses with the necessity of special institutions. The adoption of these views would at once facilitate and ennoble popular education. Nations, provinces, and towns will vie with one another in inviting the best teachers that the spiritual authorities of Western Europe can supply. And every true philosopher will take pride in such teaching, when it becomes generally understood that the popular character of his lectures implies that they shall be at the same time systematic. Members of the new spiritual power will in most cases regard teaching as their principal occupation, for at least a considerable portion of their public life.

We are not ripe for this system at present; and Government must not attempt to hasten its introduction.

What has been said makes it clear that any organisation of such education as this at the present time would be impossible. However sincere the intentions of governments to effect this great result might be, any premature attempt to do it would but injure the work, especially if they put in a claim to superintend it. The truth is that a system of education, if it deserve the name, presupposes the acceptance of a definite philosophical and social creed to determine its character and purpose. Children cannot be brought up in convictions contrary to those of their parents, or indeed without their parents' assistance. Opinions and habits that have been already formed may subsequently be strengthened by an educational system; but the carrying out of any such system is impossible, until the principles of combined action and belief have been well established. Till then our mental and moral synthesis is only possible in the case of individuals who are ripe for it, each of these endeavouring to repair the faults and deficiencies of his own education in the best way he can, by the aid of the general doctrine which he accepts. Assuming that the doctrine is destined to triumph, the number of such minds gradually increases, and they superintend the social progress of the next generation. This is the natural process, and no artificial interference can dispense with it. So far, then, from inviting government to organise education, we ought rather to exhort it to abdicate the educational powers which it already holds, and which, I refer more especially to France, are either useless or a source of discord. There are only two exceptions to this remark, of

which I have already spoken, namely, primary education, and special instruction in certain higher branches. But with these exceptions, it is most desirable that government, whether municipal or central, should surrender its unreasonable monopoly, and establish real liberty of teaching; the condition of such liberty being, as I said before, the suppression of all annual grants whatsoever for theological or metaphysical purposes. Until some universal faith has been accepted on its own merits, all attempts made by Government to reform education must necessarily be reactionary; since they will always be based on some one of the retrogressive creeds which it is our object to supersede altogether.

It is with adults, then, that we must deal. We must endeavour to disseminate systematic convictions among them, and thus open the door to a real reform of education for the next generation. The press and the power of free speech offer many ways of bringing about this result, the most important being a more or less connected series of popular lectures on the various positive sciences, including history, which henceforth takes its place among them. Now for these lectures to produce their full effect, they must, even when treating of the most elementary point in mathematics, be thoroughly philosophic and consequently animated by a social spirit. They must be entirely independent of government, so as not to be hampered by any of the authorised views. Lastly, there is a condition in which all the rest are summed up. These lectures should be Occidental, not simply National. What we require is a free association of philosophers throughout Western Europe, formed by the voluntary co-operation of all who can contribute efficiently to this great preliminary work; their services being essentially gratuitous. It is a result which no system but Positivism is capable of effecting. By its agency that coalition between philosophers and the working classes, on which so much depends, will speedily be established.

While the work of propagating Positivist convictions is going on in the free and unrestricted manner here described, the spiritual authority will at the same time be forming itself, and will be prepared to make use of these convictions as the basis for social regeneration. Thus the transitional state will be brought as nearly as possible into harmony with the normal state; and this the more in proportion as the natural affinity

between philosophers and workmen is brought out more distinctly. The connection between Positivist lectures and Positivist clubs will illustrate my meaning. While the lectures prepare the way for the Future, the clubs work in the same direction by judging the Past, and advising for the Present; so that we have at once a beginning of the three essential functions of the new spiritual power.

We have now a clear conception of popular education in its provisional, and in its normal state. Long before the normal state can be realised, the mutual action of philosophers and workmen will have done great service to both. Meeting with such powerful support from the people, the rising spiritual power will win the respect if not the affection of their rulers, even of those among them who are now the most contemptuous of every influence but that of material power. Their excess of pride will often be so far humbled that they will invite its mediation in cases where their people have been roused to just indignation. The force of numbers seems at first so violent as to carry all before it; but in the end it usually proves far inferior to that of wealth. It cannot exist for any length of time without complete convergence of opinion and feeling. Hence, a spiritual power has very great weight in controlling or directing its action. Philosophers will never, indeed, be able to manage the working classes as they please, as some unprincipled agitators have imagined; but when they exercise their authority rightly, whether it be in the cause of Order or that of Progress, they will have great power over their passions and conduct. Such influence can only spring from long cherished feelings of gratitude and trust, due not merely to presumed capacity, but to services actually rendered. No one is a fit representative of his own claims; but the philosopher may honourably represent the cause of working men before the governing classes; and the people will in their turn compel their rulers to respect the new spiritual power. By this habitual exchange of services the aspirations of the people will be kept clear of all subversive tendencies, and philosophers will be led to abandon the folly of seeking political power. Neither class will degrade itself by making its own interest the chief consideration: each will find its own reward in keeping to the nobler course of its own social duty.

Intellectual attitude of the people.

To complete this view of the political attitude which Positivism recommends to the working class, I have now to speak

of the intellectual and moral conditions which that attitude requires, and on which the character of their spiritual leaders depends. What is wanted is only a more perfect development of tendencies which already exist in the people, and which have already shown themselves strong in Paris, the centre of the great Western movement.

Emancipation from theological belief.

Intellectually the principal conditions are two; Emancipation from obsolete beliefs, and a sufficient amount of mental culture.

The emancipation of the working classes from theology is complete, at least in Paris. In no other class has it so entirely lost its power. The shallow Deism, which satisfies so many of our literary men, finds little favour with the people. They are happily unversed in studies of words and abstractions, without which this last stage in the process of emancipation speedily comes to an end. We only require a stronger expression of popular feeling on this point, so as to avoid all deception and false statement as to the intellectual character of the reorganisation that is going on. And the freedom that we are now enjoying will admit of these feelings being unmistakeably manifested, especially now that they have the new philosophy for their exponent. Strong declarations of this kind are intimately connected with the social needs of the people; for the hypocritical affectation of theological belief against which we have to fight, is designed to prevent, or at least has the effect of preventing, the just enforcement of popular claims. These unscrupulous attempts to mystify the people presuppose their mental subjection, and have simply the result of evading their legitimate aspirations for real progress by diverting their thoughts towards an imaginary future state. It is for the working classes themselves to break through this concerted scheme, which is even more contemptible than it is odious. They have only to declare without disguise what their intellectual position really is; and to do this so emphatically as to make any mistake on the part of the governing classes impossible. They will consequently reject all teachers who are insufficiently emancipated, or who in any way support the system of theological hypocrisy, which, from Robespierre downwards, has been the refuge of all reactionists, whether democrat or royalist. To teachers of another kind, who sincerely maintain that our life here on earth is a temporary banishment, and that we ought to take as little interest

in it as possible, a prompt answer may be given. They should be requested to follow out their principle consistently, and to cease to interfere in the management of a world which is so alien to their one supreme object.

From metaphysical doctrines.

Metaphysical principles have more hold on our working classes than theological; yet their abandonment is equally necessary. The subtle extravagances by which the German mind has been so confused, find, it is true, little favour in Catholic countries. But even in Paris the people retains a prejudice in favour of metaphysical instruction, though happily it has not been able to obtain it. It is most desirable that this last illusion of our working classes should be dissipated, as it forms the one great obstacle to their social action. One reason for it is that they fall into the common error of confounding knowledge with intelligence, and imagine in their modesty that none but instructed men are capable of governing. Now this error, natural as it is, often leads them to choose incompetent leaders. A truer estimate of modern society would teach them that it is not among our literary, or even our scientific men, proud as they may be of their attainments, that the largest number of really powerful intellects are to be found. There are more of them among the despised practical class, and even amongst the most uninstructed working men. In the Middle Ages this truth was better known than it is now. Education was thought more of than instruction. A knight would be appreciated for his sagacity and penetration, and appointed to important posts, though he might be extremely ignorant. Clear-sightedness, wisdom, and even consistency of thought, are qualities which are very independent of learning; and hitherto they have been far better cultivated in practical life than by scholastic study. In breadth of view, which lies at the root of all political capacity, our literary classes have certainly shown themselves far below the average.

Their mistaken preference of literary and rhetorical talent to real intellectual power.

And now we come to another and a deeper reason for the prejudice of which I am accusing even the most emancipated of our workmen. It is that they make no distinction between one kind of instruction and another. The unfortunate confidence which they still bestow on literary men and lawyers shows that the prestige of pedantocracy lingers among them longer than the prestige of theology or monarchy. But all this will soon be altered under the influence of republican government, and the

strong discipline of a sound philosophical system. Popular instinct will soon discover that constant practice of the faculty of expression, whether in speech or in writing, is no guarantee for real power of thought: indeed that it has a tendency to incapacitate men from forming a clear and decided judgment on any question. Resting, as it does, upon a course of instruction totally devoid of fixed principles, it almost always either presupposes or causes a total absence of fixed convictions. Most minds thus trained, while skilled in putting other men's thoughts into shape, become incapable of distinguishing true from false in the commonest subjects, even when their own interest requires it. The people must give up the feeling of blind respect which leads them to intrust such men with their highest interests. Reverence for superiors is doubtless indispensable to a well-ordered state; only it needs to be better guided than it is now.

What then, working men may ask, is the proper training for themselves, and consequently for those who claim to guide them? The answer is, systematic cultivation of the Positive spirit. It is already called into exercise by their daily occupations; and all that is wanted is to strengthen it by a course of scientific study. Their daily work involves a rudimentary application of the Positive method: it turns their attention to many most important natural laws. In fact, the workmen of Paris whom I take as the best type of their class, have a clearer sense of that union of reality with utility by which the Positive spirit is characterised, than most of our scientific men. The speciality of their employment is no doubt disadvantageous with respect to breadth and coherence of ideas. But it leaves the mind free from responsibility, and this is the most favourable condition for developing these qualities to which all vigorous intellects are naturally disposed. But nothing will so strongly impress on the people the importance of extending and organising their scientific knowledge, as their interest in social questions. Their determination to rectify a faulty condition of society will suggest to them that they must first know what the laws of Social life really are; knowledge which is obviously necessary in every other subject. They will then feel how impossible it is to understand the present state of society, without understanding its relation on the one hand with the Past, and on the other with the Future. Their desire to modify the natural course of social phenomena will make them anxious to know the antecedents and conse-

quences of these phenomena, so as to avoid all mischievous or useless interference. They will thus discover that Political Art is even more dependent than other arts, upon its corresponding Science. And then they will soon see that this science is no isolated department of knowledge, but that it involves preliminary study of Man and of the World. In this way they will pass downwards through the hierarchic scale of Positive conceptions, until they come back to the inorganic world, the sphere more immediately connected with their own special avocations. And thus the proletary mind will be driven to the conclusion that Positivism is the only system which can satisfy either the intellectual or material wants of the people, since its subject-matter and its objects are identical with their own, and since, like themselves, it subordinates everything to social considerations. All that it claims is to present in a systematic form principles which they already hold instinctively. By co-ordinating these principles of morality and good sense, their value whether in public or in private questions, is largely increased; and the union of the two forms of wisdom, theoretical and practical wisdom, is permanently secured. When all this is understood, the people will feel some shame at having entrusted questions of the greatest complexity to minds that have never quite comprehended the difference between a cubic inch and a cubic foot. As to men of science, in the common acceptation of the word, who are so respected by the middle classes, we need not be afraid of their gaining much influence with the people. They are alienated from them by their utter indifference to great social questions; and before these their learned puerilities fade into insignificance. Absorbed in the details of their own special science, they are quite incapable of satisfying unsophisticated minds. What the people want is to have clear conceptions on all subjects, *des clartés de tout*, as Molière has it. Whenever the savants of our time are drawn by their foolish ambition into politics, ordinary men find to their surprise that, except in a few questions of limited extent and importance, their minds have become thoroughly narrow under the influence of the specialising system of which they are so proud. Positivism explains the mystery, by showing that, since the necessity for the specialising system now no longer exists, it naturally results, if prolonged, in a sort of academic idiocy. During the last three centuries it did real service to society by laying

down the scientific groundwork for the renovation of Philosophy projected by Bacon and Descartes. But as soon as the groundwork was sufficiently finished to admit of the formation of true Science, that is, of Science viewed relatively to Humanity, the specialising method became retrograde. It ceased to be of any assistance to the modern spirit; and indeed it is now, especially in France, a serious obstacle to its diffusion and systematic working. The wise revolutionists of the Convention were well aware of this when they took the bold step of suppressing the Academy of Sciences. The beneficial results of this statesman-like policy will soon be appreciated by our workmen. The danger lest, in withdrawing their confidence from metaphysicians or literary men, they should fall into the bad scientific spirit, is not therefore very great. With the social aims which they have in view, they cannot but see that generality in their conceptions is as necessary as positivity. The Capitalist class by which industry is directed, being more concentrated on special objects, will always look on men of pure science with more respect. But the people will be drawn by their political leanings towards philosophers in the true sense of that word. The number of such men is but very small at present; but it will soon increase at the call of the working classes, and will indeed be recruited from their ranks.

Moral attitude of the people. The workman should regard himself as a public functionary.

This, then, should be the attitude of the working class, intellectually. Morally, what is required is, that they should have a sufficient sense of the dignity of labour, and that they should be prepared for the mission that now lies before them.

The workman must learn to look upon himself, morally, as a public servant, with functions of a special and also of a general kind. Not that he is to receive his wages for the future from the State, instead of from a private hand. The present plan is perfectly well adapted to all services which are so direct and definite, that a common standard of value can be at once applied to them. Only let it be understood that the service is not sufficiently recompensed, without the social feeling of gratitude towards the agent that performs it, a feeling that is recognised already in the so-called liberal professions, where the client or patient is not dispensed from gratitude by payment of his fee. In this respect the republican instincts of the Convention have instinctively anticipated the teaching of philosophy. They

valued the workman's labour at its true worth. Workmen have only to imagine labour suppressed or even suspended in the trade to which they may belong, to see its importance to the whole fabric of modern society. Their general functions as a class, the function of forming public opinion, and of supporting the action of the spiritual power, it is of course less easy for them to understand at present. But, as I have already shown, it follows so naturally from their character and position, and corresponds so perfectly with their requirements as a class, that they cannot fail to appreciate its importance when the course of events allows and indeed compels them to bring it into play. The only danger lies in their insisting on the possession of what metaphysicians call political rights, and in engaging in useless discussions about the distribution of power, instead of fixing their attention on the manner in which it is used. Of this, however, there is no great fear, at all events in France, where the metaphysical theory of Right has never reached so fanatical a pitch with the working classes as elsewhere. Ideologists may blame them, and may use their official influence as they will; but the people have too much good sense to be permanently misled as to their true function in society. Deluged as they have been with electoral votes, they will soon voluntarily abandon this useless qualification which now has not even the charm of a privilege. Questions of pure politics have ceased to interest the people; their attention is fixed, and will remain fixed, on social questions, which are to be solved for the most part through moral agencies. That substitutions of one person or party for another, or that mere modifications of any kind in the administration should be looked on as the final issue of the great Revolution, is a result in which they will never acquiesce.

And if this is to be the attitude of the people, it must be the attitude no less of those who seek to gain their confidence. With them, as with the people, political questions should be subordinate to social questions; and with them the conviction should be even more distinct, that the solution of social problems depends essentially on moral agencies. They must, in fact, accept the great principle of separation of spiritual from temporal power, as the basis on which modern society is to be permanently organised. So entirely does this principle meet the wants of the people, that the latter will soon insist on its adop-

tion by their teachers. They will accept none who do not formally abandon any prospects they may have of temporal power, parliamentary as well as administrative. And by thus dedicating their lives without reservation to the priesthood of Humanity, they will gain confidence, not merely from the people, but from the governing classes. Governments will offer no impediment to social speculations which do not profess to be susceptible of immediate application; and thus the normal state may be prepared for in the future without disturbance, and yet without neglecting the present. Practical statesmen meanwhile, no longer interfered with by pretentious sophists, will give up their retrograde tendencies, and will gradually adapt their policy to the new ideas current in the public mind, while discharging the indispensable function of maintaining material order.

Ambition of power and wealth must be abandoned.

For the people to rise to the true level of their position, they have only to develope and cultivate certain dispositions which already exist in them spontaneously. And the most important of these is absence of ambition for wealth or rank. Political metaphysicians would say that the sole object of the Great Revolution was to give the working classes easier access to political and civil power. But this, though it should always be open to them, is very far from meeting their true wants. Individuals among them may be benefited by it, but the mass is left unaffected, or rather is placed often in a worse position, by the desertion of the more energetic members. The Convention is the only government by which this result has been properly appreciated. It is the only government which has shown due consideration for working men as such; which has recognised the value of their services, and encouraged what is the chief compensation for their condition of poverty, their participation in public life. All subsequent governments, whether retrograde or constitutional, have, on the contrary, done all they could to divert the people from their true social function, by affording opportunity for individuals among them to rise to higher positions. The monied classes, under the influence of blind routine, have lent their aid to this degrading policy, by continually preaching to the people the necessity of saving; a precept which is indeed incumbent on their own class, but not on others. Without saving, capital could not be accumulated and administered; it is therefore of the highest importance that the monied classes should be as economical as possible. But in

other classes, and especially in those dependent on fixed wages, parsimonious habits are uncalled for and injurious; they lower the character of the labourer, while they do little or nothing to improve his physical condition; and neither the working classes nor their teachers should encourage them. Both the one and the other will find their truest happiness in keeping clear of all serious practical responsibility, and in allowing free play to their mental and moral faculties in public as well as private life. In spite of the Economists, savings-banks are regarded by the working classes with unmistakeable repugnance. And the repugnance is justifiable; they do harm morally, by checking the exercise of generous feelings. Again, it is the fashion to declaim against wine-shops; and yet, after all, they are at present the only places where the people can enjoy society. Social instincts are cultivated there which deserve our approval far more than the self-helping spirit which draws men to the savings-bank. No doubt this unconcern for money, wise as it is, involves real personal risk; but it is a danger which civilisation is constantly tending to diminish, without effacing qualities which do the workmen honour, and which are the source of its most cherished pleasures. The danger ceases when the mental and moral faculties are called into stronger exercise. The interest which Positivism will arouse among the people in public questions, will lead to the substitution of the club for the wine-shop. In these questions, the generous inspirations of popular instinct hold out a model which philosophers will do well to follow themselves. Fondness for money is as much a disqualification for the spiritual government of Humanity, as political ambition. It is a clear proof of moral incompetence, which is generally connected in one way or other with intellectual feebleness.

One of the principal results of the spiritual power exercised by philosophers and the working classes under the Positivist system, will be to compensate by a just distribution of blame and praise for the imperfect arrangements of social rank, in which wealth must always preponderate. Leaving the present subordination of offices untouched, each functionary will be judged by the intrinsic worth of his mind and heart, without servility, and yet without any encouragement to anarchy. It must always be obvious that the political importance which high position gives, is out of all proportion to the real merit

implied in gaining that position. The people will come to see more and more clearly that real happiness, so far from depending on rank, is far more compatible with their own humble station. Exceptional men no doubt there are, whose character impels them to seek power; a character more dangerous than useful, unless there be sufficient wisdom in the social body to turn it to good account. The best workmen, like the best philosophers, will soon cease to feel envy for greatness, laden, as it always must be, with heavy responsibilities. At present, the compensation which I hold out to them has not been realised; but when it exists, the people will feel that their spiritual and temporal leaders are combining all the energies of society for the satisfaction of their wants. Recognising this, they will care but little for fame that must be bought by long and tedious meditation, or for power burdened with constant care. There are men whose talents call them to these important duties, and they will be left free to perform them; but the great mass of society will be well satisfied that their own lot is one far more in keeping with the constitution of our nature; more compatible with that harmonious exercise of the faculties of thought, feeling, and action, which is most conducive to happiness. The immediate pressure of poverty once removed, the highest reward of honourable conduct will be found in the permanent esteem, posthumous as it may be sometimes, of that portion of Humanity which has witnessed it. In a word, the title, *servus servorum*, which is still retained by the Papacy from false humility, but which originated in anticipation of a social truth, is applicable to all functionaries in high position. They may be described as the involuntary servants of voluntary subordinates. It is not chimerical to conceive Positivist society so organised that its theoretical and practical directors, with all their personal advantages, will often regret that they were not born, or that they did not remain, in the condition of workmen. The only solid satisfaction which great minds have hitherto found in political or spiritual power has been that, being more occupied with public interests, they had a wider scope for the exercise of social feeling. But the excellence of the future condition of society will be, that the possibility of combining public and private life will be open to all. The humblest citizen will be able to influence society, not by command but by counsel, always in proportion to his energy and worth.

All the views brought forward in this chapter bear out the statement with which it began, that the Proletariate forms the principal basis of the social system, not merely as finally constituted, but in its present state of transition; and admitting this, the present state will be seen to have no essential difference from the normal future to which it tends. The principal conditions of our transitional policy were described at the conclusion of the last chapter. The best security for them is to be found in the natural tendencies of the people of Western Europe and especially of France. Our governors will do well to follow these tendencies instead of attempting to lead them: for they are in perfect keeping with the two great requirements of the present time, Liberty and Public Order.

The working classes are the best guarantee for Liberty and for Order, owing to their emancipation, their dislike of war, and their indifference to parliaments.

The freedom of thought and speech, which is enjoyed in France to an extent impossible in any other country, is due principally to the intellectual emancipation of French and especially of Parisian workmen. They have rid themselves of theology in all its forms, and yet have not accepted any metaphysical system. At the same time, though totally devoid at present of systematic convictions, there is in them a submissiveness of mind which predisposes them to receive convictions combining reality with utility. In all other classes there is a tendency to use forcible measures in support of doctrines that cannot hold their ground against discussion. It is only to the people that philosophers can look for the support and extension of Liberty, which is so essential to their objects; and from this they derive moral confidence far more reassuring than any legal security. However reactionary or stationary the views of particular leaders or sects may be, with such a population as that of Paris no real oppression is possible. Of all the claims which France has to the leadership of Europe, this is the strongest. The resistance which is still offered to freedom of association and freedom of education will soon be overcome by the force of its liberal sympathies. A population of such strong social feeling as ours will certainly not allow itself to be permanently deprived of the power of meeting together freely in clubs; institutions most conducive both to its culture and to the protection of its interests. It will insist with equal force upon perfect liberty of teaching, feeling deeply the need of solid instruction, and the incapacity of metaphysicians and theologians to give it. Without popular

pressure, the essential conditions of educational liberty will always be evaded.

And if Liberty depends upon popular support, Public Order, whether at home or abroad, depends upon it no less. The inclinations of the working classes are altogether on the side of peace. Their strong dislike of war is the principal reason of the present remarkable tranquillity of Europe. The foolish regret expressed by all the retrograde parties for the decline of the military spirit is a sufficient indication of what the popular feeling is; but even more significant is the necessity for compulsory enlistment, which began in France and has extended to other parts of Europe. There has been much factitious indignation on the subject, but at least it must be allowed, that in our armies, the officers are the only volunteers. Again, the working class is more free than any other from international prejudices, which still disunite the great family of Western nations, although they are very much weaker than formerly. They are strongest in the middle classes, a fact principally due to industrial competition. But working men feel how similar their wants and their conditions are in all countries, and this feeling checks their animosity. And the consciousness of union will become far stronger, now that the great social problem of their incorporation into modern society is being raised everywhere. No errors that statesmen can commit, whether in matters of war or peace, can prevent this from becoming the preponderating question in every European country; and thus it tends to preserve their mutual concord.

Popular sympathies of this sort are no doubt less conducive to internal tranquillity than to pacific foreign relations. But the alarm which is naturally aroused by the spiritual anarchy around us must not blind us to the real guarantees for Order which popular tendencies, rightly interpreted, hold out. It is to the people that we must look for the ascendancy of central over local power, which, as we have seen, is so indispensable to public order. The executive authority, provided only that it gives no cause to fear reaction, will always have their support when opposed by an assembly the prevalent tendencies of which will usually be adverse to their interests. They will always turn instinctively to the dictatorial rather than to the parliamentary branch of the administration; feeling that from its practical character and the directness of its action, it is more

likely to meet their wants. Barren discussions on constitutional questions may suit ambitious members of the middle classes, by facilitating their arrival to power. But the people take very little interest in all this unmeaning agitation, and often treat it with merited contempt, knowing that it can be of no use to them, and that its only result is to evade their real wants by undermining the only authority that can do them justice. Consequently the people are certain to give their support to every government that deserves it; especially in France, where political passions have already yielded to the superior and more permanent interest of social questions. And while strengthening the central power, they may do much to elevate its character by confining it strictly to its practical function, and resisting any attempts that it may make to interfere with opinion. In all these respects the spontaneous influence of the working classes will be of material assistance in carrying out the systematic conceptions of social philosophy.

The dictatorship provisionally required will be of popular origin.

But a more striking proof of the political influence to be exercised by the people is this. The dictatorship which our transitional policy requires, as long as the spiritual interregnum lasts, must arise in the first instance from their ranks.

In the word *People*, especially in the French language, there is a fortunate ambiguity, which may serve to remind us that the proletariate class is not, properly speaking, a class at all, but constitutes the body of society. From it proceed the various special classes, which we may regard as organs necessary to that body. Since the abolition of royalty, the last remnant of caste, our political leaders have been recruited, for the most part, from the working class. In the normal state, however, it will be required as a preliminary condition, that the holder of dictatorial power shall have first received the political training which is given by the exercise of authority in his own business. In a settled state of society, Government, strictly so called, is a mere extension of civil influence. Ultimately, therefore, political power will fall into the hands of the great leaders of industry. Unworthy as they seem of it at present they will gradually become less so as spiritual reorganisation proceeds; and besides, the tenure of power will become less burdensome, because it will be confined to duties of a purely practical kind.

As yet, however, the case is very different; and therefore the wealthy, though ultimately they will be the administrators

of power, are not those to whom it should as a rule be entrusted in our present condition. Special departments may be given to them with advantage, as we have seen proved recently, and that in cases where the functions to be performed had no relation whatever to industrial skill. But they are not competent as yet for dictatorial power, the power which has to supply the place of royalty. Individual exceptions of course there may be, though none have appeared hitherto, and at least they are not enough for our provisional system to rely on. As yet the wealthy classes have shown themselves too debased in thought and feeling for an office of such importance. Nor do we find greater aptitude for it outside the industrial class. Scientific men are most assuredly unfit for it, especially in France, where the system of Academies has narrowed the mind, withered the feelings, and enervated the character to such an extent, that most of them fail in the conduct of common life, and are utterly unworthy of the smallest post of authority, even in their own department.

All other classes failing us, we have to look to the working class, which has been left more free to form broad views, and in which the sense of duty has been better cultivated. On historical grounds I feel convinced that the workmen of France are more likely than any other class to supply men competent for supreme power, as long as the spiritual interregnum lasts; that is, for at least one generation.

On looking at this question calmly and without scholastic or aristocratic prejudice, it will be seen, as I pointed out at the beginning of this chapter, that the working class is better situated than any other with respect to generality of views and generosity of feeling. In knowledge and experience of administration they would ordinarily be deficient; they would therefore not be fit for the work of any special department. But this is no disqualification for the supreme power, or indeed for any of the higher offices for which breadth of view rather than special knowledge is required. These may be filled by working men, whose good sense and modesty will at once lead them to choose their agents for special departments from the classes who have usually furnished them before. The practical character and progressive spirit of such a government being placed by this salutary change beyond suspicion, special talent of whatever kind may be made available, even in the case of men who, in a

higher position would show themselves thoroughly hostile to republican institutions. Of all the diversified elements of modern society, there is not one which may not be of real service in assisting the transition. Among soldiers and magistrates, for instance, there are many who will join the popular movement, and become sincere supporters of republicanism A government of this kind would tranquillise the people, would obviate the necessity for violent compressive measures, and would at the same time have a most beneficial influence on the capitalist class. It would show them the necessity of attaining to greater purity of feeling and greater breadth of view, if they are to become worthy of the position for which they are ultimately destined.

Thus, whether we look at the interests of Public Order, or at those of Liberty, it appears necessary as a provisional measure, during the continuance of our spiritual interregnum, that the holders of dictatorial power shall be chosen from the working class. The success of a few working men in the pursuit of wealth has exercised an unsettling influence on the rest; but in the present instance we need not fear this result. It will be obvious that the career of a proletary governor is a rare exception, and one which requires peculiar endowments.

In examining the mode in which this anomalous policy should be carried out, we must bear in mind the object with which it was instituted. It is most important to get rid of the custom, established by class interests during the last generation, of insisting on parliamentary experience as an apprenticeship for executive power; executive power being always the real object of ambition. We have found from experience what we might have anticipated on theoretical grounds, that this plan excludes all except mere talkers of the Girondist type, men totally devoid of statesman-like qualities. To working men it offers almost insurmountable obstacles; and even supposing these obstacles to be overcome, we may be sure that they would lose the straightforwardness and native vigour which constitute their best claim to the exceptional position proposed for them.

It is best, then, that they should reach the position assigned to them at once, without the circuitous process of a parliamentary career. Our transition towards the normal state will then exhibit its true character. It will be tranquil and yet decisive, for it will rest on the combined action of philosophers

without political ambition, and of dictators adverse to spiritual encroachment. The teacher who attempts to govern, the governor who attempts to educate, will both incur severe public censure, as enemies alike of peace and progress. The whole result will be a change in our revolutionary condition identical with that which the Convention would have realised, if, as the founders of that admirable government contemplated, it had lasted till the Peace.

Such, then, is the nature of the compact into which all true philosophers should enter with the leading members of the proletary class. Their object is to direct the organic and final phase through which the Great Revolution is now passing, by a wise prolongation of the provisional system of the Convention; ignoring as far as possible the traditions of all succeeding governments, whether stationary or retrograde. Comprehensiveness of view and social sympathy predominate alike in both members of this great alliance; and it is thus a guarantee for our present state of transition, and a sure earnest of the normal future. The people are the spontaneous representatives of this alliance; philosophers should become its systematic organ. The intellectual deficiencies of the former will easily be remedied by philosophers, who will show them how essential it is on social grounds that they should understand the true meaning of history; since otherwise their conception of the union of mankind must be limited to the present generation, ignoring the more important truth of the continuity of the Present with the Past and the Future. A far greater obstacle is the moral deficiency of most philosophers of our time. But the wholesome influence of the people upon them, combined with a deep philosophic conviction of the preponderance of Feeling in every subject of thought, will do much to overcome the ambitious instincts which weaken and distract their energies in the common cause of social renovation.

CHAPTER IV.

THE INFLUENCE OF POSITIVISM UPON WOMEN.

Women represent the affective element in our nature, as philosophers and people represent the intellectual and practical elements.

ALTHOUGH in their action upon society philosophers may hope for energetic support from the working classes, the regenerating movement requires still the co-operation of a third element, one indicated by the true theory of human nature as well as by historical study of the great modern crisis.

The moral constitution of man consists of something more than Intellect and Activity. These are represented in the constitution of society by the philosophic body and the proletariate. But besides these there is Feeling, which, in the theory put forward in the first chapter of this work, was shown to be the predominating principle, the motive power of our being, the only basis on which the various parts of our nature can be brought into unity. Now the alliance between philosophers and working men, which has been just described, however perfectly it may be realised, does not represent the element of Feeling with sufficient distinctness and prominence.

Certainly without Social Feeling, neither philosophers nor proletaries can exercise any real influence. But in their case its source is not sufficiently pure nor deep to sustain them in the performance of their duty. A more spontaneous and more perennial spring of inspiration must be found.

With the philosopher social sympathies will never be wanting in coherence, since they will be connected with his whole system of thought; but this very scientific character would deaden their vigour, unless they were continually revived by impulses in which reflection has no share. Roused as he will be by the consciousness of public duty to a degree of activity of which abstract thinkers can form no conception, the emotions of private life will yet be not less necessary for him than for others. Even his intercourse with workmen, beneficial as it

will be, will not be enough to compensate the defects of a life devoted to speculation.

The sympathies of the people again, though stronger and more spontaneous than those of the philosopher, are in most cases, less pure and not so lasting. From the pressure of daily necessities it is difficult for them to maintain the same consistent and disinterested character. Great as are the moral advantages which will result from the incorporation of the people in modern society, they are not enough by themselves to outweigh the force of self-interest aroused by the precarious nature of their position. Emotions of a gentler and less transient kind must be called into play. Philosophers may relieve the working classes from the necessity of pressing their own claims and grievances; but the fact still remains, that the instincts by which those claims are prompted are personal rather than social.

Thus, in the alliance which has been here proposed as necessary for social reorganisation, Feeling, the most influential part of human nature, has not been adequately represented. An element is wanting which shall have the same relation to the moral side of our constitution, as the philosophic body has with Intellect, and the people with Activity. On this, as well as on other grounds, it is indispensable that Women be associated in the work of regeneration as soon as its tendencies and conditions can be explained to them. With the addition of this third element, the constructive movement at last assumes its true character. We may then feel confident that our intellectual and practical faculties will be kept in due subordination to universal Love. The digressions of intellect, and the subversive tendencies of our active powers will be as far as possible prevented.

Women have stood aloof from the modern movement, because of its anti-historic character, and its failure to subordinate politics to morality.

Indispensable to Positivism as the co-operation of women is, it involves one essential condition. Modern progress must rise above its present imperfect character, before women can thoroughly sympathise with it.

At present the general feeling amongst them is antipathy to the Revolution. They dislike the destructive character which the Revolution necessarily exhibited in its first phase; and their strongest sympathies are still given to the Middle Ages. Nor is this merely due, as is supposed, to a natural regret for the decline of chivalry, although they cannot but feel that the

Middle Ages are the only period in which the feeling of reverence for women has been properly cultivated. The real ground of their predilection is deeper and less interested. It is that, being morally the purest portion of Humanity, they venerate Catholicism, as the only system which has upheld the principle of subordinating Politics to Morals. This, I cannot doubt, is the secret cause of most of the regret with which women still regard the irrevocable decay of mediæval society.

They do not disregard the progress which modern times have made in various special directions. But our erroneous tendencies towards bringing back the old supremacy of Politics over Morality, are, in their eyes, a retrograde movement, so comprehensive in its character that no partial improvements can compensate for it. True, we are able to justify this deviation provisionally, corresponding as it does to the necessity of political dictatorship resulting from the decay of Catholicism. But women, having comparatively little to do with the practical business of life, can hardly appreciate this necessity without a more satisfactory theory of history than they at present possess. It is a complete mistake to charge women with being retrograde on account of these honourable feelings of regret. They might retort the charge with far better reason on the revolutionists for their blind admiration of Greek and Roman society, which they still persist in asserting to be superior to Catholic Feudalism; a delusion, the continuance of which is principally due to our absurd system of classical education, from which women are fortunately preserved.

However this may be, the feelings of women upon these subjects are a very plain and simple demonstration of the first condition of social regeneration, which is, that Politics must again be subordinated to Morality; and this upon a more intelligible, more comprehensive, and more permanent basis than Catholicism could supply. A system which supplied such a basis would naturally involve reverence for women as one of its characteristic results. Such, then, are the terms on which women will cordially co-operate in the progressive movement. Nothing but incapacity to satisfy these terms could induce any thinkers to condemn the conception as retrograde.

It is not, then, to the Revolution itself that women feel antipathy, but to the anti-historic spirit which prevailed in its first phase. The blind abuse lavished on the Middle Ages

wounds their strongest sympathies. They care little for metaphysical theories of society in which human happiness is made to consist in a continual exercise of political rights; for political rights, however attractively presented, will always fail to interest them. But they give their cordial sympathy to all reasonable claims of the people; and these claims form the real object of the revolutionary crisis. They will wish all success to philosophers and workmen when they see them endeavouring to transform political disputes into social compacts, and proving that they have greater regard for duties than for rights. If they regret the decline of the gentle influence which they possessed in former times, it is principally because they find it superseded by coarse and egotistic feelings, which are now no longer counterbalanced by revolutionary enthusiasm. Instead of blaming their antipathies, we should learn from them the urgent necessity of putting an end to the moral and intellectual anarchy of our times: for this it is which gives a ground of real justice to their reproaches.

But they will sympathise with the constructive tendencies of the new synthesis; and will distinguish sound philosophy from scientific specialities.

Women will gladly associate themselves with the Revolution as soon as its work of reconstruction is fairly begun. Its negative phase must not be prolonged too far. It is difficult enough for them to understand how such a phase could ever be necessary; therefore they cannot be expected to excuse its aberrations. The true connection of the Revolution with the Middle Ages must be fairly stated. History, when rightly interpreted, will show them that its real object is, while laying down a surer basis for Morality, to restore it to the old position of superiority over Politics in which the mediæval system first placed it. Women will feel enthusiasm for the second phase of the Revolution, when they see republicanism in the light in which Positivism presents it, modified by the spirit of ancient chivalry.

Then, and not till then, will the movement of social regeneration be fairly begun. The movement can have no great force until women give cordial support to it; for it is they who are the best representatives of the fundamental principle on which Positivism rests, the victory of social over selfish affections. On philosophers rests the duty of giving logical coherence to this principle and saving it from sophistical attacks. Its practical working depends upon the proletary class, without whose aid it would almost always be evaded. But to maintain it in all its purity, as an inspiration that needs neither argument nor

compulsion, is the work of women only. So constituted, the alliance of the three classes will be the foreshadowed image of the normal state to which Humanity is tending. It will be the living type of perfect human nature.

Unless the new philosophy can obtain the support of women, the attempt to substitute it for theology in the regulation of social life had better be abandoned. But if the theory stated in my first chapter be true, Positivism will have even greater influence with women than with the working classes. In the principle which animates it, in its manner of regarding and of handling the great problem of human life, it is but a systematic development of what women have always felt instinctively. To them, as to the people, it offers a noble career of social usefulness, and it holds out a sure prospect of improvement in their own personal position.

Nor is it surprising that the new philosophy should possess such qualities. They follow naturally from the reality which is one of its chief claims to acceptance; in other words, from the exactness with which it takes account of the facts of every subject that it deals with. Strong as the prejudices of women are upon religious questions, it cannot be long before they find out that Positivism satisfies, not merely their intellectual, but their moral and social wants better than Catholicism. They will then have no further reason for clinging to the old system, of the decayed condition of which they are perfectly aware. At present they not unnaturally confound Positivism with the scientific specialities on which it is based. Scientific studies have, as they see, a hardening influence, which they cannot suppose that the new school of philosophers, who insist so strongly upon the necessity of studying science, can have escaped. Closer acquaintance with the subject will show them where their error lies. They will see that the moral danger of scientific studies arises almost entirely from want of purpose and from irrational speciality, which always alienate them from the social point of view. But for the Positivist this danger does not exist; since, however far he may carry these preliminary studies, he does so simply in order to gain a stronger grasp of social questions. His one object is to concentrate all the powers of Man upon the general advancement of the race. And so long as this object be kept in view, women's good sense will readily distinguish between the training necessary for it, and

the puerilities of the learned societies. The general spirit of this work, however, makes further explanation of this point unnecessary.

Women's position in society. Like philosophers and people, their part is not to govern, but to modify.

The social mission of Woman in the Positive system follows as a natural consequence from the qualities peculiar to her nature.

In the most essential attribute of the human race, the tendency to place social above personal feeling, she is undoubtedly superior to man. Morally, therefore, and apart from all material considerations, she merits always our loving veneration, as the purest and simplest impersonation of Humanity, who can never be adequately represented in any masculine form. But these qualities do not involve the possession of political power, which some visionaries have claimed for women, though without their own consent. In that which is the great object of human life, they are superior to men ; but in the various means of attaining that object they are undoubtedly inferior. In all kinds of force, whether physical, intellectual, or practical, it is certain that Man surpasses Woman, in accordance with the general law prevailing throughout the animal kingdom. Now practical life is necessarily governed by force rather than by affection, because it requires unremitting and laborious activity. If there were nothing else to do but to love, as in the Christian utopia of a future life in which there are no material wants, Woman would be supreme. But we have above everything else to think and to act, in order to carry on the struggle against a rigorous destiny ; therefore Man takes the command, notwithstanding his inferiority in goodness. Success in all great undertakings depends more upon energy and talent than upon goodwill, although this last condition reacts strongly upon the others.

Thus the three elements of our moral constitution do not act in perfect harmony. Force is naturally supreme, and all that women can do is to modify it by affection. Justly conscious of their superiority in strength of feeling, they endeavour to assert their influence in a way which is too often attributed by superficial observers to the mere love of power. But experience always teaches them that in a world where the simplest necessaries of life are scarce and difficult to procure, power must belong to the strongest, not to the most affectionate, even though the latter may deserve it best. With all their efforts

they can never do more than modify the harshness with which men exercise their authority. And men submit more readily to this modifying influence, from feeling that in the highest attributes of Humanity women are their superiors. They see that their own supremacy is due principally to the material necessities of life, provision for which calls into play the self-regarding rather than the social instincts. Hence we find it the case in every phase of human society that women's life is essentially domestic, public life being confined to men. Civilisation, so far from effacing this natural distinction, tends, as I shall afterwards show, to develop it, while remedying its abuses.

Thus the social position of women is in this respect very similar to that of philosophers and of the working classes. And we now see why these three elements should be united. It is their combined action which constitutes the modifying force of society.

Philosophers are excluded from political power by the same fatality as women, although they are apt to think that their intellectual eminence gives them a claim to it. Were our material wants more easily satisfied, the influence of intellect would be less impeded than it is by the practical business of life. But, on this hypothesis, women would have a better claim to govern than philosophers. For the reasoning faculties would have remained almost inert had they not been needed to guide our energies; the constitution of the brain not being such as to favour their spontaneous development. Whereas the affective principle is dependent on no such external stimulus for its activity. A life of thought is a more evident disqualification for the government of the world even than a life of feeling, although the self-conceit of philosophers is a greater obstacle to submission than the vanity of women. With all its pretensions, intellectual force is not in itself more moral than material force. Each is but an instrument; the merit depends entirely upon its right employment. The only element of our nature which is in itself moral is Love; for Love alone tends of itself towards the preponderance of social feeling over self-interest. And since even Love cannot govern, what can be the claim of Intellect? In practical life precedence must always depend upon superior energy. Reason, even more than Feeling, must be restricted to the task of modifying. Philosophers therefore must be ex-

cluded from government at least as rigidly as women. It is in vain for intellect to attempt to command; it never can do more than modify. In fact, the morality which it indirectly possesses is due to this impossibility of exercising compulsory power, and would be ruined by the attainment of it, supposing such a dream to be possible. Intellect may do much to amend the natural order of things, but only on the condition of not attempting to subvert it. What it can do is by its power of systematic arrangement to effect the union of all the classes who are likely to exert a beneficial influence on material power. It is with this view that every spiritual power has availed itself of the aid of women, as we see was the case in the Middle Ages.

Proceeding with our sociological analysis of moral force, we shall find an equally striking resemblance between the influence of Women and that exercised by the People.

In the first stage of progress, there is no modifying power except what springs from Feeling: afterwards Intellect combines with it, finding itself unable to govern. The only element now wanting is Activity; and this want, which is indispensable, is supplied by the co-operation of the people. The fact is, that although the people constitute the basis on which all political power rests, yet they have as little to do directly with the administration of power as philosophers or women.

Power in the strict sense of the word, power, that is, which controls action without persuading the will, has two perfectly distinct sources, numbers and wealth. The force of numbers is usually considered the more material of the two; but in reality it is the more moral. Being created by co-operation, it involves some convergence of ideas and feelings, and therefore it does not give such free scope for the self-regarding instincts as the more concentrated power of wealth. But for this very reason, it is too indirect and precarious for the ordinary purposes of government. It can influence government morally, but cannot take an active part in it; and this for the same reasons that apply in the case of philosophers and women. Our material necessities are so urgent, that those who have the means of providing for them will always be the possessors of power. Now the wealthy have these means; they hold in their hands the products of labour, by which each generation facilitates the existence and prepares the operations of its successor. Consequently

the power of the capitalist is one of so concentrated and practical a kind, that numbers can very seldom resist it successfully. Even in military nations we find the same thing; the influence of numbers, though more direct, affects only the mode of acquiring wealth, not its tenure. But in industrial states, where wealth is acquired by other ways than violence, the law is still more evident. And with the advance of civilisation it will operate not less but more strongly; because capital is ever on the increase, and consequently is ever creating means of subsistence for those who possess nothing. In this sense, but in no other, the cynical maxim of Antiquity, *Paucis nascitur humanum genus*, will always bear a true meaning. The few provide subsistence for the many. We come back, then, to the conclusion of the last chapter: that the working classes are not destined for political power, but that they tend to become a most important source of moral power. The moral value of their influence is even more indirect than that of philosophers, and depends even more in their case upon subordination in action. In the few cases where government passes for a time into the hands of the masses, wealth in its turn assumes a sort of moral influence foreign to its nature. It moderates the violence with which government is apt to be administered in such cases. The high intellectual and moral qualities belonging to the working classes are, as we have seen, in great part due to their social position. They would be seriously impaired if the political authority that belongs to wealth were habitually transferred to numbers.

The united action of philosophers, women, and proletaries constitutes Moral Force.

Such, in outline, is the Positive theory of moral force; by which the despotism of material force may be in part controlled. It rests upon the union of the three elements in society who are excluded from the sphere of politics strictly so called. In their combined action lies our principal hope of solving, so far as it can be solved, the great problem of man's nature, the successful struggle of Social Feeling against Self-love. Each of the three elements supplies a quality indispensable to the task. Without women this controlling power would be deficient in purity and spontaneous impulse; without philosophers, in wisdom and coherence; without the people, in energy and activity. The philosophic element, although neither the most direct nor the most efficient, is yet the distinctive feature of this power, because its function is to organise its constitution and direct its

operations in accordance with the true laws of social life. As being the systematic organ of the spiritual power it has become identified with it in name. This, however, may lead to an erroneous conception; because the moral aspect of the spiritual power is more important than the intellectual. While retaining the name as an historical tradition of real value, Positivism will rectify the error involved in it, which originated in a time when theories of society were unknown, and when Intellect was considered as the central principle of human nature.

Spiritual power, as interpreted by Positivism, begins with the influence of women in the family; it is afterwards moulded into a system by thinkers, while the people are the guarantee for its political efficiency. Although it is the intellectual class that institutes the union, yet its own part in it, as it should never forget, is less direct than that of women, less practical than that of the people. The thinker is socially powerless except so far as he is supported by feminine sympathy and popular energy.

Thus the necessity of associating women in the movement of social regeneration creates no obstacle whatever to the philosophy by which that movement is to be directed. On the contrary, it aids its progress by showing the true character of the moral force which is destined to control all the other forces of man. It involves as perfect an inauguration of the normal state as our times of transition admit. For the chief characteristic of that state will be a more complete and more harmonious union of the same three classes to whom we are now looking for the first impulse of reform. Already we can see how perfectly adapted to the constitution of man this final condition of Humanity will be. Feeling, Reason, Activity, whether viewed separately or in combination, correspond exactly to the three elements of the regenerative movement, Women, Philosophers, and People.

Verification of this theory may be found more or less distinctly in every period of history. Each of the three classes referred to have always borne out the biological law that the life of relation or animal life, is subordinated to the life of nutrition. Still more striking is the application to this case of another general principle, namely, that Progress is the development of Order; a principle which, as I showed in the second chapter, connects every dynamical question in Sociology with

the corresponding statical conception. For with the growth of society, the modifying influence of moral force is always increasing, both by larger scope being given to each of its three elements specially, and also by the more perfect consolidation of their union. Robertson's striking observation on the gradual improvement in the condition of women is but a particular case of this sociological law. The general principle on which progress in all three classes depends, is the biological law that the preponderance of vegetable life over animal life diminishes, as the organism is higher in the scale and is more perfectly developed.

During the various phases of ancient Polytheism, the controlling power consisted simply of the moral influence exerted by women in the Family. In public life the influence of thinkers had not made itself independent of the governmental authority, of which it was sometimes the source, sometimes the instrument. Mediæval Catholicism went a step further, and took the first step in systematising moral force. It created an independent spiritual authority to which political governments were subordinated, and this authority was always supported by women. But the complete organisation of moral force was reserved for modern times. It is only recently that the working classes have begun to interfere actively in social questions; and, as I have shown in the preceding chapter, it is from their co-operation that the new spiritual power will derive its practical efficiency. Limited originally to the sphere of Feeling, and subsequently extended to the intellectual sphere, it henceforward embraces the sphere of Activity; and this without losing its spiritual character, since the influences of which it consists are entirely distinct from the domain of practical politics. Each of its three elements persuades, advises, judges; but except in isolated cases, never commands. The social mission of Positivism is to regulate and combine their spontaneous action, by directing each to the objects for which it is best adapted.

And this mission, in spite of strong prejudices to the contrary, it will be found well calculated to fulfil. I have already shown its adaptation to the case of the people and of the philosophic body, whether regarded separately or in combination; I have now to show that it is equally adapted to the case of women.

In proof of this I have but to refer to the principle on which,

as stated in the first chapter, the whole system of Positivism is based: the preponderance of affection in our nature. Such a principle is of itself an appeal to women to associate themselves with the system, as one of its essential elements. In Catholicism their co-operation, though valuable, was not of primary importance, because Catholicism claimed a divine origin independent of their assistance. But to Positivism they are indispensable, as being the purest and simplest embodiment of its fundamental principle. Apart from their domestic influence, it will be their special task to call philosophers and people back to that unity of purpose which originated in the first place with themselves, and which each of the other elements is often disposed to violate.

All true philosophers will no doubt be profoundly influenced by the chain of arguments proving the logical and scientific preponderance of the social point of view, and will therefore be prepared to admit as a systematic principle the precedence of the Heart over the Intellect. Still they require some more direct incentive to universal Love than such convictions can supply. Knowing, as they do, how slight is the practical result of purely intellectual considerations, they will welcome so precious an incentive, were it only in the interest of their own mission. I recognised its necessity myself, when I wrote on the 11th of March 1846, to her who, in spite of death, will always remain my constant companion: 'I was incomplete as a philosopher, until the experience of deep and pure passion had given me fuller insight into the emotional side of human nature.' Strong affection exercises a marvellous influence upon mental effort, by elevating the intellect at once to the only point of view which is really universal. Doubtless, the method of pure science leads up to it also; but only by a long and toilsome process, which exhausts the powers of thought, and leaves little energy for following out the new results to which this great principle gives rise. The stimulation of affection under feminine influence is necessary, therefore, for the acceptance of Positivism, not merely in those classes for whom a long preliminary course of scientific study would be impossible. It is equally necessary for the systematic teachers of Positivism, in whom it checks the tendency, which is encouraged by habits of abstract speculation, to deviate into useless digressions; these being always easier to prosecute than researches of real value.

Superiority of the new spiritual power to the old. Self-regarding tendencies of Catholic doctrine.

Under this new aspect the new spiritual system is obviously superior to the old. By the institution of celibacy, which was indispensable to Catholicism, its priests were entirely removed from the beneficial influence exercised by women. Only those could profit from it who did not belong to the ecclesiastical body; the members of that body, as Ariosto has remarked in his vigorous satire, were excluded. Nor could the evil be remedied, except in very rare cases, by an irregular attachment, which inevitably corrupted the priest's character by involving the necessity of perpetual hypocrisy.

And when we look at the difference of the spirit by which the two systems are pervaded, we shall find still more striking evidence that the new system offers a far larger sphere of moral influence to women than the old.

Both are based upon the principle of affection; but in Positivism the affection inculcated is social, in Catholicism it is essentially personal. The object set before the believer, while purely individual, is yet of such stupendous magnitude, that feelings which are unconnected with it are in danger of being crushed. The priesthood, it is true, wise interpreters in this respect of a general instinct, brought all the more important social obligations within the compass of religion, by holding them out as necessary for salvation. Indirectly, the nobler feelings were thus called into action; but at the same time they were rendered far less spontaneous and pure. There could be no perfectly disinterested affection under a system which promised infinite rewards for all acts of self-denial. For it was impossible, and indeed it would have been thought sinful, to keep the future out of sight; and thus all spontaneous generosity was unavoidably tainted by self-interest. Catholicism gave rise to an ignoble theory of morals which became very mischievous when it was adopted by the metaphysicians; because, while retaining the vicious principle, they swept away the checks by which the priesthood had controlled it. But even when we look at the purest form in which the love of God was exhibited, we cannot call it a social feeling, except in so far as the same object of worship was held out simultaneously to all. Intrinsically it was anti-social; since, when attained in absolute perfection, it implied the entire sacrifice of all other love. And in the best representatives of Christian thought and feeling, this tendency is very apparent. No one has portrayed the Catholic ideal with

such sublimity and pathos as the author of the Imitation, a work which so well deserved the beautiful translation of Corneille. And yet, reading it as I do daily, I cannot help remarking how grievously the natural nobleness of his heart was impaired by the Catholic system, although, in spite of all obstacles, he rises at times to the purest ardour. Certainly those of our feelings which are purely unselfish must be far stronger and more spontaneous than has ever yet been supposed, since even the oppressive discipline of twelve centuries could not prevent their growth.

The spirit of Positivism, on the contrary, is essentially social. The Heart and the Intellect mutually strengthen each other.

Positivism, from the fact of its conformity with the constitution of our nature, is the only system calculated to develop, both in public and in private life, those high attributes of Humanity, which, for want of adequate systematic culture, are still in their rudimentary stage. Catholicism, while appealing to the Heart crushed Intellect; and Intellect naturally struggled to throw off the yoke. Positivism on the contrary brings Reason into complete harmony with Feeling, without impairing the activity of either.

Scientific study of the relation which each individual bears to the whole race is a continual stimulus to social sympathy. Without a theory of society it is impossible to keep this relation distinctly and constantly in view. It is only noticed in a few exceptional cases, and unconnected impressions are soon effaced from the memory. But the Positivist teacher, taking the social point of view invariably, will make this notion far more familiar to us than it has ever been before. He will show us the impossibility of understanding an individual or society apart from the whole life of the race. Nothing but the bewilderment caused by theological and metaphysical doctrines can account for the shallow explanations of human affairs given by our teachers, attributing as they do to Man what is really due to Humanity. But with the sounder theory that we now possess, we can see the truth as it really stands. We have but to look each of us at our own life under its physical, intellectual, or moral aspects, to recognise what it is that we owe to the combined action of our predecessors and contemporaries. The man who dares to think himself independent of others, either in feelings, thoughts, or actions, cannot even put the blasphemous conception into words without immediate self-contradiction, since the very language he uses is not his own. The profoundest

thinker cannot by himself form the simplest language; it requires the co-operation of a community for several generations. Without further illustration, the tendency of Positive doctrine is evident. It appeals systematically to our social instincts, by constantly impressing upon us that only the Whole is real; that the Parts exist only in abstraction.

But independently of the beneficial influence which, in this final state of Humanity, the mind will exercise upon the heart, the direct culture of the heart itself will be more pure and more vigorous than under any former system. It offers us the only means of disengaging our benevolent affections from all calculations of self-interest. As far as the imperfection of man's nature admits, these affections will gradually tend towards supremacy, since they give deeper satisfaction than all others, and are capable of fuller development. Those for whom theological rewards and punishments have lost their power, can alone attain to that which is the real happiness of man, pure and disinterested love; the true Sovereign Good, sought for so long by former systems of philosophy in vain. That it surpasses all other good one fact will show, known to the tender-hearted from personal experience; that it is even better to love than to be loved. Overstrained as this may seem to many, it is yet in harmony with a general truth, that our nature is in a healthier state when active than when passive. In the happiness of being loved, there is always some tinge of self-love; it is impossible not to feel pride in the love of one whom we prefer to all others. Since, then, loving gives purer satisfaction than being loved, the superiority of perfectly disinterested affection is at once demonstrated. It is the fundamental defect of our nature, that intrinsically these affections are far weaker than the selfish propensities necessary for the preservation of our own existence. But when they have once been aroused, even though the original stimulus may have been personal, they have greater capacity of growth, owing to the peculiar charm inherent in them. Besides, in the exercise of these feelings, all of us can co-operate with and encourage one another, whereas the reverse is the case with the selfish instincts. There is, therefore, nothing unreasonable in supposing that Positivism, by regulating and combining these natural tendencies, may rouse our sympathetic instincts to a condition of permanent activity hitherto unknown. When the heart is no longer crushed by theological dogmas, or hardened

by metaphysical theories, we soon discover that real happiness whether public or private, consists in the highest possible development of the social instincts. Self-love comes to be regarded as an incurable infirmity, which is to be yielded to only so far as is absolutely necessary. Here lies the universal adaptability of Positivism to every type of character and to all circumstances. In the humblest relations of life as in the highest, regenerate Humanity will apply the obvious truth, It is better to give than to receive.

The Heart thus aroused will in its turn react beneficially upon the Intellect; and it is especially from women that this reaction will proceed. I have spoken of it so fully before, that I need not now describe it further. It is in Feeling that I find the basis on which the whole structure of Positivism, intellectually as well as morally considered, rests. The only remark I have now to add is, that by following out this principle, philosophical difficulties of the most formidable kind are at once surmounted. From moral considerations, the intellect may be readily induced to submit to scientific restrictions, the propriety of which would remain for a long time matter of debate, were philosophical discussions the only means of indicating it. Attempt, for instance, to convince a pure mathematician, however conscientious and talented, that Sociology is both logically and scientifically superior to all other studies. He would not readily admit this; and severe exertion of the inductive and deductive faculties can alone convince him of it. But by the aid of Feeling, an artisan or a woman can without education readily grasp this great encyclopædic principle, and apply it practically to the common affairs of life. But for this, the larger conceptions of philosophy would have but a limited range, and very few would be capable of the course of study which is yet so important on social grounds for all. Comprehensiveness of mind is no doubt favourable to sympathy, but is itself more actively stimulated by it. When the Positivist method of education is accepted, moral excellence will be very generally regarded as a guarantee of real intellectual capacity. The revolutionist leaders of the Convention showed their sense of this connection by allowing, as they did sometimes, republican ardour to outweigh scientific attainment. Of course, so long as men remain without a systematic theory of morals, such policy would be likely to fail of its object, and indeed would

become positively mischievous. But the reproach is usually that it was a retrograde policy; a reproach far more applicable to the present system, in which the standard of fitness for any office is regulated exclusively by intellectual considerations, the heart being altogether disregarded. Historically we can explain this practice by the fact that the religious faith by which alone hitherto our moral nature has been stimulated has been of a most oppressive character. Ever since the Middle Ages, the intellect and the heart have been unavoidably at issue. Positivism is the only system which can put an end to their antagonism, because, as I have before explained, while subordinating Reason to Feeling, it does so in such a way as not to impair the development of either. With its present untenable claims to supremacy, intellect is in reality the principal source of social discord. Until it abdicates in favour of the Heart, it can never be of real service in reconstruction. But its abdication will be useless, unless it is entirely voluntary. Now this is precisely the result which Positivism attains, because it takes up the very ground on which the claims of intellect are defended, namely, scientific demonstration; a ground which the defenders of intellect cannot repudiate without suspicion at once attaching to their motives. But theological or metaphysical remedies can only exasperate the disease. By oppressing the intellect they provoke it to fresh insurrection against the heart.

Intellectual and moral affinities of women with Positivism.

For all these reasons, women, who are better judges of moral questions than ourselves, will admit that Positivism, incontestably superior as it is to other systems intellectually, surpasses them yet more in dealing with the affections. Their only objection arises from confounding Positive Philosophy itself with its preliminary course of scientific study.

Women's minds no doubt are less capable than ours of generalising very widely, or of carrying on long processes of deduction. They are, that is, less capable than men of abstract intellectual exertion. On the other hand, they are generally more alive to that combination of reality with utility which is one of the characteristics of Positive speculation. In this respect they have much in common intellectually with the working classes; and fortunately they have also the same advantage of being untrammelled by the present absurd system of education. Nor is their position far removed from what it should be normally: being less engaged than men in the

business of life, their contemplative faculties are called into activity more easily. Their minds are neither preoccupied nor indifferent; the most favourable condition for the reception of philosophical truth. They have far more affinity intellectually with philosophers who truly deserve the name, than we find in the scientific men of the present day. Comprehensiveness of thought they consider as important as positivity, whereas our savants care for nothing but the latter quality, and even that they understand imperfectly. Molière's remarkable expression, *des clartés de tout*, which I applied in the last chapter to popular education, was used by him in reference to women. Accordingly we find that women took a vivid interest in the very first attempt made to systematise Positive speculation; the Cartesian philosophy. No more striking proof could be given of their philosophical affinities; and the more so that in the Cartesian system moral and social speculations were necessarily excluded. Surely then we may expect them to receive Positivism far more favourably, a system of which the principal subject of speculation is the moral problem in which both sexes are alike interested.

Women therefore may, like the people, be counted among the future supporters of the new philosophy. Without their combined aid it could never hope to surmount the strong repugnance to it which is felt by our cultivated classes, especially in France, where the question of its success has first to be decided.

Catholicism purified love, but did not directly strengthen it.

But when women have sufficient acquaintance with Positivism, to see its superiority to Catholicism in questions of feeling, they will support it from moral sympathy even more than from intellectual adhesion. It will be the heart even more than the mind which will incline them to the only system of philosophy which has fully recognised the preponderance of Feeling. They cannot fail to be drawn towards a system which regards women as the embodiment of this principle; the unity of human nature, of which this principle is the basis, being thus entrusted to their special charge. The only reason of their regret for the past, is that the present fails to satisfy their noblest social instincts. Not that Catholicism ever really satisfied them; indeed in its general character it is even less adapted to women than to men, since the dominant quality of woman's nature is in direct contradiction with it. Christianity, notwithstanding

its claims to moral perfection, has always confounded the quality of tenderness with that of purity. And it is true that love cannot be deep unless it is also pure. But Catholicism, although it purified love from the animal propensities which had been stimulated by Polytheism, did nothing otherwise to strengthen it. It has given us indeed too many instances of purity, pushed to the extent of fanaticism, without tenderness. And this result is especially common now, because the austerity of the Christian spirit is not corrected, as it used to be, by the inspiring influences of Chivalry. Polytheism, deficient as it was in purity, was really far more conducive to tenderness than Christianity. Love of God, the supreme affection round which Catholicism endeavoured to concentrate all other feelings, was essentially a self-regarding principle, and as such conflicted with woman's noblest instincts. Not only did it encourage monastic isolation, but if developed to the full extent, it became inconsistent with love for our fellow-men. It was impiety for the knight to love his Lady better than his God; and thus the best feelings of his nature were repressed by his religious faith. Women, therefore, are not really interested in perpetuating the old system; and the very instincts by which their nature is characterised, will soon incline them to abandon it. They have only been waiting until social life should assume a less material character: so that morality, for the preservation of which they justly consider themselves responsible, may not be compromised. And on this head Positivism satisfies their heart no less than their understanding with all the guarantees that they can require. Based as it is upon accurate knowledge of our nature, it can combine the simple affectionate spirit of Polytheism with the exquisite purity of Catholicism, without fear of taint from the subversive sophisms engendered by the spiritual anarchy of our times. Not however that purity is to be placed on the same level with tenderness. Of these two essential qualities of women, tenderness ranks first, because more closely connected with the grand object of all human effort, the elevation of Social Feeling over Self-love. In a woman without tenderness there is something even more monstrous than in a man without courage. Whatever her talents and even her energy may be, they will in most cases prove mischievous both to herself and to others, unless indeed they should be nullified by the restraint of theological discipline. If she has force of character it will be wasted

in a struggle against all legitimate authority; while her mental power will be employed only in destructive sophisms. Too many cases of this kind present themselves in the social anarchy of the present time.

Such is the Positivist theory on the subject of Women. It marks out for them a noble field of social usefulness, embracing public as well as private life, and yet in a way thoroughly in harmony with their nature. Without leaving the family, they will participate in the controlling power exercised by philosophers and workmen, seeking even in their own domestic sphere rather to modify than to govern. In a word, as I shall show more fully in the last chapter of this introductory work, Woman is the spontaneous priestess of Humanity. She personifies in the purest form the principle of Love upon which the unity of our nature depends; and the culture of that principle in others is her special function.

Women's influence over the working classes and their teachers.

All classes, therefore, must be brought under women's influence, for all require to be reminded constantly of the great truth that Reason and Activity are subordinate to Feeling. Of their influence upon philosophers I have spoken. These, if they are men worthy of their mission, will be conscious of the tendency which their life has to harden them and lead them into useless speculation; and they will feel the need of renewing the ardour of their social sympathy at its native source. Feeling, when it is pure and deep, corrects its own errors, because they clash with the good to which it is ever tending. But erroneous use of the intellectual or practical faculties cannot be even recognised, much less corrected, without the aid of Affection, which is the only part of our nature that suffers directly from such errors. Therefore whenever either the philosopher or the people deviate from duty, it will be the part of women to remonstrate with them gently, and recall them to the true social principles which are entrusted to their special charge.

With the working classes, the special danger to be contended against is their tendency to abuse their strength, and to resort to force for the attainment of their objects instead of persuasion. But the difficulty here will be less than that of contending against the misuse of intellectual power to which philosophers are so liable. Thinkers who try to make reasoning do the work of feeling have hitherto not often been convinced of their error. Popular excitement on the contrary often yields to feminine

influence, exerted though it is at present without any systematic guidance. The difference is no doubt partly owing to the fact that there are now few or none who deserve the name of philosophers; for we cannot give that name to the superficial sophists and rhetoricians of our time, whether psychologists or ideologists, men wholly incapable of deep thought on any subject. Independently of this, however, the difference is explained by the character of the two classes. Women will always find it harder to deal with intellectual conceit than with popular violence. Appeals to social feeling are their only weapons; and the social feelings of the workman are stronger than those of the philosopher. Sophistry is a far more formidable obstacle than passion. In fact, were it not that the working classes are even now so amenable to female influence, society would be in extreme danger from the disorder caused by intellectual anarchy. There are many sophisms which maintain themselves in spite of scientific refutation, and which would be destructive of all order, were it not for our moral instincts. Of this the Communists offer a striking example, in avoiding, with that admirable inconsistency to which I have already called attention, the extension of their principle to the Family. Surrounded by the wildest theories, of which the inevitable tendency is to destroy or paralyse society, we see large numbers of working men showing in their daily life a degree of affection and respect for women, which is unequalled by any other class. It is well to reflect on facts like these, not only because they lead us to judge the Communist school with more justice, but because, occurring as they do in the midst of social anarchy, they show what powerful agencies for good will be at our disposal in more settled times. Certainly they cannot be attributed to theological teaching, which has rather had the effect of strengthening the errors which it attacks by the absurdity of its refutations. They are simply the result of the influence which women have spontaneously exercised on the nobler feelings of the people. In Protestant countries, where their influence is less, the mischievous effects of Communistic theories have been far greater. We owe it to women that the Family has been so little injured by the retrograde spirit of those republican reformers, whose ideal of modern society is to absorb the Family into the State, as was done by a few small tribes in ancient Greece.

The readiness shown by women in applying practical remedies to erroneous theories of morality is shown in other cases

where the attractiveness of the error would seem irresistible to the coarser nature of men. The evils consequent on divorce, which has been authorised in Germany for three centuries, have been much lessened by women's instinctive repugnance to it. The same may be said of recent attacks upon marriage, which are still more serious, because the anarchy of modern life revives all the extravagances of the metaphysical spirit in ancient times. In no one case has a scheme of society hostile to marriage met with any real favour from women, plausible as many of them seemed. Unable in their ignorance of social science to see the fallacy of such schemes themselves, our revolutionary writers cannot conceive that women will not be convinced by them. But happily, women, like the people, judge in these matters by the heart rather than by the head. In the absence of any guiding principle to direct the understanding and prevent the deviations to which it is always exposed, the heart is a far safer guide.

There is no need at present of pursuing these remarks farther. It is abundantly clear that women are in every respect adapted for rectifying the moral deviations to which every element in the social organism is liable. And if we already feel the value of their influence, springing as it does from the unaided inspirations of the heart, we may be sure it will become far more consolidated and will be far more widely felt, when it rests on the basis of a sound philosophical system, capable of refuting sophisms and exposing fallacies from which their unassisted instinct is insufficient to preserve us.

Their social influence in the *salon*.

Thus the part to be played by women in public life is not merely passive. Not only will they give their sanction individually and collectively to the verdicts of public opinion as formed by philosophers and by the people; but they will themselves interfere actively in moral questions. It will be their part to maintain the primary principle of Positivism, which originated with themselves, and of which they will always be the most natural representatives.

But how, it may be asked, can this be reconciled with my previous remark that women's life should still be essentially domestic?

For the ancients, and for the greater part of the human race at the present time, it would be irreconcileable. But in Western Europe the solution has long ago been found. From the time when Women acquired in the Middle Ages their proper freedom

in the household, opportunities for social intercourse arose which combined most happily the advantages of private and of public life; and in these women presided. The practice afterwards extended, especially in France, and these meetings became the laboratories of public opinion. It seems now as if they had died out, or had lost their character in the intellectual and moral anarchy of our times which is so unfavourable to free interchange of thoughts and feelings. But a custom so social, and which did such good service in the philosophical movement preceding the Revolution, is assuredly not destined to perish. In the more perfect social state to which we are tending, it will be developed more fully than ever, when men's minds and hearts have accepted the rallying-point offered by the new philosophy.

This is, then, the mode in which women can with propriety participate in public life. Here all classes will recognise their authority as paramount. Under the new system these meetings will entirely lose their old aristocratic character, which is now simply obstructive. The Positivist *salon* placed under feminine influence completes the series of social meetings, in which the three elements of the spiritual power will be able to act in concert. First, there is the religious assemblage in the Temple of Humanity. Here the philosopher will naturally preside, the other two classes taking only a secondary part. In the Club again it is the people who will take the active part; women and philosophers supporting them by their presence, but not joining in the debate. Lastly, women in their *salons* will promote active and friendly intercourse between all three classes; and here all who may be qualified to take a leading part will find their influence cordially accepted. Gently and without effort a moral control will thus be established, by which misguided or violent movements will be checked in their source. Kind advice, given indirectly but seasonably, will often save the philosopher from being blinded by ambition, or from deviating, through intellectual conceit, into useless digressions. Working men at these meetings will learn to repress the spirit of violence or envy that frequently arises in them, recognising the sacredness of the care thus manifested for their interests. And the great and the wealthy will be taught from the manner in which praise and blame is given by those whose opinion is most valued, that the only justifiable use of power or talent is to devote it to the service of the weak.

But, however important the public duties that women will ultimately be called upon to perform, the Family is after all their highest and most distinctive sphere of work. It was in allusion to their domestic influence that I spoke of them as the originators of spiritual power. Now the Family, although it is the basis of all human society, has never been satisfactorily defended by any received system of philosophy. All the corrosive power of metaphysical analysis has been employed upon it; and of many of the sophisms put forward no rational refutation has been given. On the other hand, the protection of the theologians is no less injurious. For they still persist in connecting the institutions of the Family with their obsolete dogmas, which now simply endanger the existence of all that they once effectively defended. From the close of the Middle Ages the priesthood has been powerless, as the licentious songs of the troubadours prove, to protect the sanctity of marriage against the shallow but mischievous attacks which even then were made against it. And afterwards, when these frivolous maxims of private immorality became more generally prevalent, and even royal courts disgraced themselves by giving public approval to them, the weakness of the priests became still more manifest. Thus nothing can be more monstrous than these ignorant assertions that theological doctrines have been the safeguard of the Family. They have done nothing to preserve it from the most subversive attacks, under which it must have succumbed; but for the better instincts of society, especially of the female portion of it. With the exception of a foolish fiction about the origin of Woman, theology has put forward no systematic defence of marriage; and as soon as theological authority itself fell into discredit, the feeble sanction which it gave to domestic morality became utterly powerless against sophistical attacks. But now that the Family can be shown on Positive principles to rest on scientific laws of human nature or of society, the dangers of metaphysical controversy and theological feebleness are past. These principles will be discussed systematically in the second volume of this treatise. But the few remarks to which in this introductory view of the subject I must limit myself, will, I hope, at least satisfy the reader as to the capability of Positivism to re-establish morality upon a firm basis.

But the family is their principal sphere of action.

According to the lower views of the subject, such as those coarsely expressed by the great hero of reaction, Napoleon,

Woman's mission as a wife. Con-

jugal love an education for universal sympathy.

procreation and maternity are the only social functions of Woman. Indeed many theorists object even to her rearing her children, and think it preferable to leave them to the abstract benevolence of the State. But in the Positivist theory of marriage and of the family the principal service to be rendered by Woman is one quite unconnected with the function of procreation. It is directly based upon the highest attributes of our nature.

Vast as is the moral importance of maternity, yet the position of wife has always been considered even more characteristic of woman's nature; as shown by the fact that the words woman and wife are in many languages synonymous. Marriage is not always followed by children; and besides this, a bad wife is very seldom indeed a good mother. The first aspect then under which Positivism considers Woman, is simply as the companion of Man, irrespective of her maternal duties.

Viewed thus, Marriage is the most elementary and yet the most perfect mode of social life. It is the only association in which entire identity of interests is possible. In this union, to the moral completeness of which the language of all civilised nations bears testimony, the noblest aim of human life is realised, as far as it ever can be. For the object of human existence, as shown in the second chapter, is progress of every kind; progress in morality, that is to say, in the subjection of Self-interest to Social Feeling, holding the first rank. Now this unquestionable principle, which has been already indicated in the second chapter, leads us by a very sure and direct path to the true theory of marriage.

Different as the two sexes are by nature, and increased as that difference is by the diversity which happily exists in their social position, each is consequently necessary to the moral development of the other. In practical energy and in the mental capacity connected with it, Man is evidently superior to Woman. Woman's strength, on the other hand, lies in Feeling. She excels Man in love, as Man excels her in all kinds of force. It is impossible to conceive of a closer union than that which binds these two beings to the mutual service and perfection of each other, saving them from all danger of rivalry. The voluntary character too of this union gives it a still further charm, when the choice has been on both sides a happy one. In the Positive theory, then, of marriage, its principal object is con-

sidered to be that of completing and confirming the education of the heart by calling out the purest and strongest of human sympathies.

It is true that sexual instinct, which, in man's case at all events, was the origin of conjugal attachment, is a feeling purely selfish. It is also true that its absence would, in the majority of cases, diminish the energy of affection. But woman, with her more loving heart, has usually far less need of this coarse stimulus than man. The influence of her purity reacts on man, and ennobles his affection. And affection is in itself so sweet, that when once it has been aroused by whatever agency, its own charm is sufficient to maintain it in activity. When this is the case, conjugal union becomes a perfect ideal of friendship; yet still more beautiful than friendship, because each possesses and is possessed by the other. For perfect friendship, difference of sex is essential, as excluding the possibility of rivalry. No other voluntary tie can admit of such full and unrestrained confidence. It is the source of the most unalloyed happiness that man can enjoy; for there can be no greater happiness than to live for another.

But independently of the intrinsic value of this sacred union, we have to consider its importance from the social point of view. It is the first stage in our progress towards that which is the final object of moral education, namely, universal Love. Many writers of the so-called socialist school, look upon conjugal love and universal benevolence, the two extreme terms in the scale of affections, as opposed to each other. In the second chapter, I pointed out the falseness and danger of this view. The man who is incapable of deep affection for one whom he has chosen as his partner in the most intimate relations of life, can hardly expect to be believed when he professes devotion to a mass of human beings of whom he knows nothing. The heart cannot throw off its original selfishness without the aid of that affection which, by virtue of its concentration on one object, is the most complete and enduring. From personal experience of strong love we rise by degrees to sincere affection to all mankind, strong enough to modify conduct: although, as the scope of feeling widens, its energy must decrease. The connection of these two states of feeling is instinctively recognised by all; and it is clearly indicated by the Positive theory of human nature, which has now placed it beyond the reach of metaphysical

attacks. When the moral empire of Woman has been more firmly established by the diffusion of Positivist principles, men will see that the common practice of looking to the private life of a statesman as the best guarantee of his public conduct had deep wisdom in it. One of the strongest symptoms of the general laxity of morals to which mental anarchy has brought us, is that disgraceful law passed in France thirty years ago, and not yet repealed, the avowed object of which was to surround men's lives with a 'wall' of privacy; a law introduced by psychologist politicians who no doubt needed such a wall.[1]

Conditions of marriage. Indissoluble monogamy.

The purpose of marriage once clearly understood, it becomes easy to define its conditions. The intervention of society is necessary; but its only object is to confirm and to develop the order of things which exists naturally.

It is essential in the first place to the high purposes for which marriage has been instituted, that the union shall be both exclusive and indissoluble. So essential indeed are both conditions, that we frequently find them even when the connection is illegal. That any one should have ventured to propound the doctrine that human happiness is to be secured by levity and inconstancy in love, is a fact which nothing but the utter deficiency of social and moral principles can explain. Love cannot be deep unless it remains constant to a fixed object; for the very possibility of change is a temptation to it. So differently constituted as man and woman are, is our short life too much for perfect knowledge and love of one another? Yet the versatility to which most human affection is liable makes the intervention of society necessary. Without some check upon indecision and caprice, life might degenerate into a miserable series of experiments, ending in failure and degradation. Sexual love may become a powerful engine for good: but only on the condition of placing it under rigorous and permanent discipline. Those who doubt the necessity for this, have only to cast a glance beyond Western Europe at the countries where no such discipline has been established. It has been said that the adoption or rejection of polygamy is a simple question of climate. But this frivolous hypothesis is as contrary to common observation as to philosophic theory. Marriage, like every other human institution, has always been improving. Beginning in all

[1] This law was introduced by Royer-Collard. It forbids discussion of the private affairs of public men.

countries with unrestricted polygamy, it tends in all to the purest monogamy. Tracing back the history of Northern Europe to a sufficiently early date, we find polygamy there as well as in the South; and Southern nations, like Northern, adopt monogamy as their social life advances. We see the tendency to it in those parts of the East which come into contact with Western civilisation.

Monogamy, then, is one of the most precious gifts which the Middle Ages have bequeathed to Western Europe. The striking superiority of social life in the West is probably due to it more than to any other cause. Protestant countries have seriously impaired its value by their laws of divorce. But this temporary aberration is alien to the purer feelings of women and of the people, and the mischief done by it is limited to the privileged classes. France is now threatened with a revival of the metaphysical delusions of the Revolution, and it is feared by some that the disastrous example of Germany in this respect will be imitated. But all such tendencies, being utterly inconsistent with the habits of modern life, will soon be checked by the sounder philosophical principles which have now arisen. The mode of resistance to these errors which Positivism adopts will render the struggle most useful in hastening the adoption of the true theory of marriage. The spirit of Positivism being always relative, concessions may be made to meet exceptional cases, without weakening or contradicting the principle; whereas the absolute character of theological doctrine was incompatible with concession. The rules of morality should be general and comprehensive; but in their practical application exceptions have often to be made. By no philosophy but the Positive can these two conditions be reconciled.

Perpetual widowhood.

To the spirit of anarchy, however, Positivism yields nothing. The unity essential to marriage, it renders more complete than ever. It develops the principal of monogamy by inculcating, not as a legal institution, but as a moral duty, the perpetuity of widowhood. Affection so firmly concentrated has always been regarded with respect, even on man's side. But hitherto no religion has had sufficient purity or influence to secure its adoption. Positivism, however, from the completeness of its synthesis, and from the fact that its rules are invariably based on the laws of nature, will gain such influence and will find little difficulty in inducing all natures of delicate feeling to

accept this additional obligation. It follows from the very principle which to the Positivist is the object of all marriage, the raising and purifying of the heart. Unity of the tie which is already recognised as necessary in life, is not less so in death. Constancy in widowhood was once common among women ; and if its moral beauty is less appreciated now, it is because all systematic morality has been forgotten. But it is none the less, as careful study of human nature will show, a most precious source of moral good, and one which is not beyond the reach of nobler natures, even in their youth. Voluntary widowhood, while it offers all the advantages which chastity can confer on the intellectual and physical as well as on the moral nature, is yet free from the moral dangers of celibacy. Constant adoration of one whom Death has implanted more visibly and deeply on the memory, leads all high natures, and philosophic natures especially, to give themselves more unreservedly to the service of Humanity; and thus their public life is animated by the ennobling influence of their innermost feelings. Alike from a sense of their own truest happiness and from devotion to public duty, they will be led to this result.

Deep as is the satisfaction in this prolongation of the sacredness of marriage, it may be carried by those who recognise its value yet further. As the death of one did not destroy the bond, so neither should the death of both. Let then those whom death could not divide be laid in the same grave together. A promise of this solemn act of perpetuation might be given beforehand, when the organs of public opinion judged it merited. A man would find a new motive for public exertion, if it were felt to be a pledge that the memory of her whom he loved should be for ever coupled with his own. We have a few instances where this union of memories has taken place spontaneously, as in the case of Laura and Petrarch, and of Dante and Beatrice. Yet these instances are so exceptional, that they hardly help us to realise the full value of the institution proposed. There is no reason for limiting it to cases of extraordinary genius. In the more healthy state of society to which we are tending, where public and private life will be far more closely connected than they have been hitherto, this recompense of service may be given to all who have deserved it, by those who have come within their circle of influence.

Such, then, are the consolations which Positivist sympathy

can give. They leave no cause to regret the visionary hopes held out by Christianity, hopes which now are as enfeebling to the heart as to the intellect. Here, as in all other respects, the moral superiority of Positivism is shown, for the comfort which it gives to the bereaved implies a strengthening of the tie. Christian consolation, of which so much has been said, rather encourages a second union. By so doing it seriously impairs the value of the institution; for a division of affection arises, which indeed seems hardly compatible with the vague utopia of a future life. The institutions of perpetual widowhood and of union in the tomb have found no place in any previous system, though both were wanting to make monogamy complete. Here, as elsewhere, the best reply which the new philosophy can give to ignorant prejudice or malignant calumny, is to take new steps forward in the moral advancement of Man.

Thus the theory of marriage, as set forward by the Positivist, becomes totally independent of any physical motive. It is regarded by him as the most powerful instrument of moral education; and therefore as the basis of public or individual welfare. It is no overstrained enthusiasm which leads us to elevate the moral purity of marriage. We do so from rigorous examination of the facts of human nature. All the best results, whether personal or social, of marriage may follow when the union, though more impassioned, is as chaste as that of brother and sister. The sexual instinct has no doubt something to do in most cases with the first formation of the passion; but it is not necessary in all cases to gratify the instinct. Abstinence, in cases where there is real ground for it on both sides, will but serve to strengthen mutual affection.

Woman's mission as a mother.

We have examined the position of Woman as a wife, without supposing her to be a mother. Completing the sociological theory of the subject, we shall find that maternity, while it extends her sphere of moral influence, does not alter its nature.

As a mother, no less than as a wife, her position will be improved by Positivism. She will have, almost exclusively, the direction of household education. Public education given subsequently, will be, as I have explained in the preceding chapter, little but a systematic development of that which has been previously given at home.

Education of children belongs to mo-

For it is a fundamental principle that education, in the normal condition of society, must be entrusted to the spiritual

thers. They only can guide the development of character.

power; and in the Family the spiritual power is represented by Woman. The strong prejudices by which such a course would now be resisted are but symptoms of the revolutionary tendency prevalent since the close of the Middle Ages, to place the intellect above the heart. We have neglected the moral side of education, and have given undue importance to its intellectual side. But Positivism having superseded this revolutionary phase by demonstrating the preponderance of the heart over the intellect, moral education will resume its proper place. Certainly the present mode of instruction is not adapted for Woman's teaching. But their influence over the education of the future will be even greater than it was in the Middle Ages. For in the first place, in every part of it, moral considerations will be paramount: and moreover, until puberty, nothing will be studied continuously except Art and Poetry. The knights of old times were usually brought up in this way under feminine guidance, and on them most assuredly it had no enervating influence. The training can hardly be supposed less adapted to a pacific than to a warlike state of society. For instruction, theoretical and practical, as distinguished from education, masters are no doubt necessary. But moral education will be left entirely to women, until the time arrives for systematic teaching of moral science in the years immediately preceding majority. Here the philosopher is necessary. But the chief duties of the philosopher lie with adults; his aim being to recall them, individually or collectively, to principles impressed on them in childhood, and to enforce the right application of these principles to special cases as they may arise. That part of education which has the greatest influence on life, what may be called the spontaneous training of the feelings, belongs entirely to the mother. Hence it is, as I have already observed, of the greatest importance to allow the pupil to remain with his family, and to do away with the monastic seclusion of our public schools.

The peculiar fitness of women for inculcating the elementary principles of morality is a truth which every true philosopher will fully recognise. Women, having stronger sympathies than men, must be better able to call out sympathies in others. Men of good sense have always felt it more important to train the heart than the head; and this is the view adopted by Positive Philosophy. The reality characteristic of that philosophy saves us from the danger of exaggerating the importance of system

and of forgetting the conditions on which its utility depends. In morals, even more than in other subjects, we can only systematise what has existed previously without system. The feelings must first be stimulated to free and direct action, before we attempt to bring them under philosophic discipline. And this process, which begins with birth, and lasts during the whole period of physical growth, should be left for women to superintend. So specially are they adapted for it, that failing the mother, a female friend, if well chosen, who could make herself a member of the family, would in most cases do better than the father himself. The importance of cultivating feeling can only be appreciated by minds in which feeling is preponderant. It is only women who really understand that most human actions, and certainly those of early life, ought not to be judged in themselves so much as by the tendencies which they show or by the habits to which they lead. Viewed with reference to their influence on character, no actions are indifferent. The simplest events in a child's life may serve as an occasion for enforcing the fundamental principle by which the early as well as the later stages of Positivist education should be directed; the strengthening of Social Feeling, the weakening of Self-love. In fact, actions of an unimportant kind are precisely those in which it is easiest to appreciate the feelings which prompted them; since the mind of the observer, not being occupied with the consequences of such actions, is more free to examine their source. Moreover, it is only by teaching the child to do right in small things that he can be trained for the hard inward struggle that lies before him in life; the struggle to bring the selfish instincts more and more completely under the control of his higher sympathies. In these respects the best tutor, however sympathetic his nature, will be always inferior to a good mother. A mother may often not be able to explain the reason of the principle on which she acts, but the wisdom of her plans will generally show itself in the end. Without formal teaching, she will take every opportunity of showing her children, as no other instructor could show them, the joy that springs from generous feelings, and the misery of yielding to selfishness.

From the relation of mother we return by a natural transition to Woman's position as a wife. The mother, though her authority of course tends to decrease, continues to superintend the growth of character until the ordinary age of marriage. Up

to that time feminine influence over Man has been involuntary on his part. By marriage he enters into a voluntary engagement of subordination to Woman for the rest of his life. Thus he completes his moral education. Destined himself for action, he finds his highest happiness in honourable submission to the ennobling influence of one in whom the dominant principle is affection.

The important field of public and private duty thus opened to Woman is therefore nothing but a larger and more systematic development of the qualities by which she is characterised. Her mission is so uniform in its nature, and so clearly defined, that there seems hardly room for much uncertainty as to her proper social position. It is a striking instance of the rule which applies universally to all human effort; namely, that the order of things instituted by man ought to be simply a consolidation and improvement of the natural order.

Modern sophisms about Women's rights The domesticity of her life follows from the principle of Separation of Powers.

In all ages of transition, as in our own, there have been false and sophistical views of the social position of Woman. But we find it to be a natural law that Woman should pass the greater part of her life in the family; and this law has never been affected to any important extent. It has always been accepted instinctively, though the sophistical arguments against it have never yet been adequately refuted. The institution of the family has survived the subtle attacks of Greek metaphysics, which then were in all the vigour of their youth, and which were acting on minds that had no systematic principles to oppose to them. Therefore, profound as the intellectual anarchy of the present day may be, we need not be seriously alarmed when we see that nothing worse comes of it than shallow plagiarisms from ancient utopias, against which the vigorous satire of Aristophanes was quite enough to rouse general indignation. True, there is a more complete absence of social principles now than when the world was passing from Polytheism to Monotheism; but our intellectual powers are more developed than they were then, and in moral culture our superiority is even greater. Women in those times were too degraded to offer effective opposition, even by silence, to the pedants who professed to be taking up their cause; the only resistance offered was of a purely intellectual kind. But happily in modern times the women of the West have been free; and have consequently been able to manifest such unmistakeable aversion for these ideas, and for the want of

moral discipline which gives rise to them, that, though still unrefuted philosophically, their mischievous effects have been neutralised. Nothing but women's antipathy has prevented the practical outrages which seem logically to follow from these subversive principles. Among our privileged classes, the danger is aggravated by indolence; moreover, the possession of wealth has a bad influence on women's moral nature. Yet even here the evil is not really very deep or widely spread. Men have never been seriously perverted, and women still less so, by flattery of their bad propensities. The really formidable temptations are those which act upon our better instincts, and give them a wrong direction. Schemes which are utterly offensive to female delicacy will never really be adopted, even by the wealthier classes, who are less averse to them than others. The repugnance shown to them by the people, with whom the mischief that they would cause would be irreparable, is far more decided. The life which working people lead makes it very clear to both sexes what the proper position of each should be. Thus it will be in the very class where the preservation of the institution of the family is of the greatest importance, that Positivists will find the least difficulty in establishing their theory of the social position of women, as consequent on the sphere of public and private duty which has been here assigned to them.

Looking at the relation of this theory to other parts of the Positive system, we shall see that it follows from the great principle which dominates every other social problem, the principle of separating spiritual and temporal power. That Woman's life should be concentrated in her family, and that even there her influence should be that of persuasion rather than that of command, is but an extension of the principle which excludes the spiritual power from political administration. Women, as the purest and most spontaneous of the moral forces of society, are bound to fulfil with rigorous exactness all the conditions which the exercise of moral force demands. Effectually to perform their mission of controlling and guiding our affections, they must abstain altogether from the practical pursuits of the stronger sex. Such abstinence, even when the arrangements of society may leave it optional, is still more desirable in their case than in the case of philosophers. Active life, incompatible as it is with the clearness and breadth of philosophic speculation,

is even more injurious to delicacy of feeling, which is women's highest claim to our respect and the true secret of their influence. The philosophic spirit is incompatible with a position of practical authority, because such a position occupies the mind with questions of detail. But to purity of feeling it is even more dangerous, because it strengthens the self-regarding instincts. And for women it would be harder to avoid the danger of such a position than for men. Abounding as they do in sympathy, they are generally deficient in energy, and are therefore less able to withstand corrupting influences. The more we examine this important subject, the clearer it becomes that the present condition of women does not hamper them in their true work; that on the contrary, it is well calculated to develop and even improve their highest qualities. The natural arrangements of society in this as in other respects are far less faulty than might be supposed from the blind declamations now being directed against them. Were it not for the natural exercise of strong material forces moral force would soon deteriorate, because its distinctive purpose would be gone. Philosophers and proletaries would soon lose their intellectual and moral superiority by the acquisition of power. But on women its effect would be still more disastrous. From instances in the upper classes of society where wealth gives them independence, and sometimes unfortunately even power, we see but too clearly what the consequences would be. And this is why we have to look to the poorer classes for the highest type of womanly perfection. With the people sympathy is better cultivated, and has a greater influence upon life. Wealth has more to do with the moral degradation of women among the privileged classes than even idleness and dissipation.

The position of the sexes tends to differentiation rather than identity.

The continuous progress of Humanity in this respect, as in every other, is but a more complete development of the pre-existing order. Equality in the position of the two sexes is contrary to their nature, and no tendency to it has at any time been exhibited. All history assures us that with the growth of society the peculiar features of each sex have become not less but more distinct. Catholic Feudalism, while raising the social condition of women in Western Europe to a far higher level, took away from them the priestly functions which they had held under Polytheism; a religion in which the priesthood was more occupied with art than with science. So too, with the gradual

decline of the principle of caste, women have been excluded more and more rigidly from royalty and from every other kind of political authority. Again, there is a visible tendency towards the removal of women from all industrial occupations, even from those which might seem best suited to them. And thus female life, instead of becoming independent of the Family, is being more and more concentrated in it; while at the same time their proper sphere of moral influence is constantly extending. The two tendencies, so far from being opposed, are on the contrary inseparably connected.

Without discussing the absurd and retrograde schemes which have been recently put forward on the subject, there is one remark which may serve to illustrate the value of the order which now exists. If women were to obtain that equality in the affairs of life which their so-called champions are claiming for them without their wish, not only would they suffer morally, but their social position would be endangered. They would be subject in almost every occupation to a degree of competition which they would not be able to sustain; while in the meantime by rivalry in the pursuits of life mutual affection between the sexes would be corrupted at its source.

Woman to be maintained by Man.

Leaving these subversive dreams, we find a natural principle which, by determining the practical obligations of the active to the sympathetic sex, averts this danger. It is one which no philosophy but Positivism has been sufficiently real and practical to bring forward systematically for general acceptance. It is no new invention, however, but a universal tendency, confirmed by careful study of the whole past history of Man. The principle is, that Man should provide for Woman. It is a natural law of the human race; a law connected with the essentially domestic character of female life. We find it in the rudest forms of social life; and with every step in the progress of society its adoption becomes more extensive and complete. A still larger application of this fundamental principle will meet all the material difficulties under which women are now labouring. All social relations, and especially the question of wages, will be affected by it. The tendency to it is spontaneous; but it also follows from the high position which Positivism has assigned to Woman as the sympathetic element in the spiritual power. The intellectual class, in the same way, has to be supported by the practical class, in order to have its whole time

available for the special duties imposed upon it. But in the case of women, the obligation of the other sex is still more sacred, because the sphere of duty in which protection for them is required is the home. The obligation to provide for the intellectual class affects society as a whole; but the maintenance of women is, with few exceptions, a personal obligation. Each individual should consider himself bound to maintain the woman he has chosen to be his partner in life. Apart from this, however, men must consider themselves as collectively responsible in an indirect way for the support of the other sex. Women who are without husbands or parents should have their maintenance guaranteed by society; and this not merely as a compensation for their dependent position, but with the view of enabling them to render public service of the greatest moral value.

The direction, then, of progress in the social condition of woman is this: to render her life more and more domestic; to diminish as far as possible the burden of out-door labour; and so to fit her more completely for her special office of educating our moral nature. Among the privileged classes it is already a recognised rule that women should be spared all laborious exertion. It is almost the only point in the relations of the sexes in which the working classes would do well to imitate the habits of their employers. In every other respect the people of Western Europe have a higher sense of their duties to women than the upper classes. Indeed there are few of them who would not be ashamed of the barbarity of subjecting women to the tasks imposed now on so many of them, if the present state of our industrial system was compatible with the abolition of so monstrous a practice. But it is chiefly among the higher and wealthier classes that we find those degrading and very often fraudulent bargains in which immoral intervention of parents effects at once the humiliation of one sex, and the corruption of the other. Among the working classes the practice of giving dowries is almost extinct; and as women's true mission becomes more recognised, and choice in marriage becomes less restricted, this relic of barbarism, with all its debasing results, will rapidly die out. With this view the application of our theory should be carried one step further. Women should not be allowed to inherit. If inheritance be allowed, the prohibition of dowries would be evaded in

a very obvious manner by discounting the reversionary interest. Since women are to be exempt from the labour of production, capital, that is to say, the instruments of labour produced by each generation for the benefit of the next, should revert to men. This view of inheritance, so far from giving to men an unnatural privilege, places them under heavy responsibilities. It is not from women that any serious opposition to it will proceed. Wise education will show its value to them personally, as a safeguard against unworthy suitors. But important as the rule is, it should not be legally enforced until it has become established on its own merits as a general custom, felt by all to be conducive to the healthy organisation of the Family as here described.

The education of women should be identical with that of men.

Coming now to the subject of female education, we have only to make a further application of the theory which has guided us hitherto.

Since the vocation assigned by our theory to women is that of educating others, it is clear that the educational system which we have proposed in the last chapter for the working classes, applies to them as well as to the other sex with very slight alterations. Unencumbered as it is with specialities, it will be found, even in its more scientific parts, as suitable for the sympathetic element of the moderating power, as to the synergic element. We have spoken of the necessity of diffusing sound historical views among the working classes; and the same necessity applies to women; for social sympathy can never be perfectly developed, without a sense of the continuity of the Past, as well as the solidarity of the Present. Since then both sexes alike need historical instruction as a basis for the systematisation of moral truth, both should alike pass through the scientific training which prepares the way for social studies, and which moreover has as intrinsic value for women as for men. Again, since the period of spontaneous education is entirely to be left to women, it is most desirable that they should themselves have passed through the systematic education which is its necessary complement. The only department with which they need not concern themselves, is what is called professional education. This, as I have before observed, is not susceptible of regular organisation, and can only be acquired by careful practice and experience, resting upon a sound basis of theory. In all other

respects women, philosophers, and working men will receive the same education.

But while I would place the sexes on a level in this respect, I do not take the view of my eminent predecessor Condorcet, that they should be taught together. On moral grounds, which of course are the most important consideration, it is obvious that such a plan would be equally prejudicial to both. In the church, in the club, in the *salon*, they may associate freely at every period of life. But at school such intercourse would be premature; it would check the natural development of character, not to say that it would obviously have an unsettling influence upon study. Until the feelings on both sides are sufficiently matured, it is of the greatest importance that the relations of the two sexes should not be too intimate, and that they should be superintended by the watchful eye of their mothers.

As, however, the subjects of study are to be the same for both, the necessity of separating the sexes does not imply that there should be special teachers for women. Not to speak of the increased expenditure that would thus be incurred, it would inevitably lower the standard of female education. It would always be presumed that their teachers were men of inferior attainments. To ensure that the instruction given is the same for both sexes, the instructors must be the same, and must give their lectures alternately to each sex. These conditions are perfectly compatible with the scheme described in the last chapter. It was there mentioned that each philosopher would be expected to give one, or, in some cases, two lectures every week. Now, supposing this were doubled, it would still come far short of the intolerable burdens which are imposed upon teachers in the present day. Moreover, as the Positivist educator will pass successively through the seven stages of scientific instruction, he will be able so to regulate his work as to avoid wearisome repetition of the same lectures in each year. Besides, the distinguished men to whom our educational system will be entrusted will soon discover that their two audiences require some difference in the manner of teaching, and that this may be done without in any way lowering the uniform standard which their method and their doctrines require.

But independently of the importance to female education of this identity of teachers, it will react beneficially on the intellectual and moral character of the philosopher who teaches.

It will preclude him from entering into useless details, and will keep him involuntarily to the broad principles of his subject. By coming into contact simultaneously with two natures, in one of which thought, and in the other emotion, is predominant, he will gain clearer insight into the great truth of the subordination of the intellect to the heart. The obligation of teaching both sexes will complete that universality of mind which is to be required of the new school of philosophers. To treat with equal ability of all the various orders of scientific conceptions, and to interest two audiences of so different a character, is a task which will demand the highest personal qualifications. However, as the number required by the conditions is not excessive, it will not be impossible to find men fit for the purpose, as soon as the proper means are taken to procure their services, and to guarantee their material subsistence. It must be borne in mind, too, that the corporation of teachers is not to be recruited from any one nation for itself, but from the whole of Western Europe; so that the Positivist educator will change his residence, when required, even more frequently than Catholic dignitaries in the Middle Ages. Putting these considerations together, we shall find that Positivist education for both sexes may be organised on an ample scale for the whole of Western Europe, with less than the useless, or worse than useless, expenditure incurred by the clergy of the Anglican church alone. This would give each functionary an adequate maintenance, though none of them would be degraded by wealth. A body of twenty thousand philosophers would be enough now, and probably would always suffice, for the spiritual wants of the five Western nations; since it would allow the establishment of the septennial system of instruction in two thousand stations. The influence of women and of working men will never become so systematic as to enable them to dispense with philosophic assistance altogether. But in proportion as they become more effectually incorporated as elements of the spiritual power, the necessity of enlarging the purely speculative class, which under theological systems has been far too numerous, will diminish. The privilege of living in comfort without productive labour will then be so rare, and so dearly earned as to leave no rational ground of objection to it. It will be universally felt that the cost of maintaining these philosophic teachers, like that of maintaining women, is no real burden to the productive classes; on the contrary, that it conduces to their highest in-

terest, by ensuring the performance of those intellectual and moral functions which are the distinctive features of Humanity.

It appears, then, that the primary principle laid down at the beginning of this chapter enables us to solve all the problems that offer themselves on the subject of Woman. Her function in society is determined by the constitution of her nature. As the spontaneous organ of Feeling, on which the unity of human nature entirely depends, she constitutes the purest and most natural element of the moderating power; which, while avowing its own subordination to the material forces of society, purposes to direct them to higher uses. First as mother, afterwards as wife, it is her office to conduct the moral education of Humanity. In order the more perfectly to fulfil this mission, her life must be connected even more closely than it has been with the Family. At the same time she must participate to a more and more complete extent in the general system of instruction.

Women's privileges. Their mission is in itself a privilege.

A few remarks on the privileges which the fulfilment of this vocation will bring, will complete this part of my subject.

Women's mission is a striking illustration of the truth that happiness consists in doing the work for which we are naturally fitted. Their mission is in reality always the same; it is summed up in one word, Love. It is the only work in which there can never be too many workers; it grows by co-operation; it has nothing to fear from competition. Women are charged with the education of Sympathy, the source of human unity; and their highest happiness is reached when they have the full consciousness of their vocation, and are free to follow it. It is the admirable feature of their social mission, that it invites them to cultivate qualities which are natural to them; to call into exercise emotions which all allow to be the most pleasurable. All that is required for them in a better organisation of society is a better adaptation of their circumstances to their vocation, and improvements in their internal condition. They must be relieved from out-door labour; and other means must be taken to secure due weight to their moral influence. Both objects are contemplated in the material, intellectual, and moral ameliorations which Positivism is destined to effect in the life of women.

They will receive honour and worship from men.

But besides the pleasure inherent in their vocation, Positivism offers a recompense for their services, which Catholic Feudalism foreshadowed but could not realise. As men become more and more grateful for the blessing of their moral influence,

they will give expression to this feeling in a systematic form. In a word the new doctrine will institute the Worship of Woman, publicly and privately, in a far more perfect way than has ever before been possible. It is the first permanent step towards the worship of Humanity; which, as the concluding chapter of this general view will show, is the central principle of Positivism, viewed either as a philosophy or as a polity.

Development of mediæval chivalry.

Our ancestors in chivalrous times made noble efforts in this direction, which, except by women, are now no longer appreciated. But these efforts, however admirable, were inadequate; partly owing to the military spirit of society in those times, partly because their religious doctrines had not a sufficiently social character. Nevertheless, they have left memories which will not perish. The refinement of life in Western Europe is in great part due to them, although much of it is already effaced by the anarchy of the present time.

Chivalry, if we are to believe the negative philosophers of the last century, can never revive; because the religious beliefs with which it was connected have become obsolete. But the connection was never very profound, and there is no reason whatever for its continuance. Far too much has been made of it by recent apologists for Catholicism; who, while laying great stress on the sanction which Theology gave to Chivalry, have failed to appreciate the sympathies to which this admirable institution is really due. The real source of Chivalry lies most unquestionably in the feudal spirit. Theological sanction for it was afterwards sought for, as the only systematic basis that offered itself at that time. But the truth is that Theology and Chivalry were hardly compatible. Theology fixed men's thoughts upon a visionary future; Chivalry concentrated his energies upon the world around him. The knight of the Middle Ages had always to choose between his God and his Lady: and could therefore never attain that concentrated unity of purpose, without which the full result of his mission, so generously undertaken, could never be realised.

Placed as we are now near the close of the revolutionary period, we are beginning to see that Chivalry is not destined to extinction; that on the contrary when modern life has assumed its normal character, its influence will be greater than ever, because it will operate on a more pacific society, and will be based on a more human faith. For Chivalry satisfies an essential

want of society, one which becomes more urgent as civilisation advances; the voluntary combination of the strong for the protection of the weak. The period of transition from the offensive military system of Rome to the defensive system of Feudalism, was naturally the time of its first appearance, and it received the sanction of the creed then dominant. But society is now entering upon a period of permanent peace; and when this, the most striking political feature of modern times, has become firmly established, the influence of Chivalry will be greater than ever. Its procedure will be different, because the modes of oppression are happily not now what they were formerly. The instruments of material force being now not military but industrial, it is no longer the person that is attacked, but his means of subsistence. The advantages of the change are obvious: the danger is less serious, and protection from it is easier and more effectual. But it will still remain most desirable that protectors should come forward, and this in an organised form. The destructive instinct will always show itself in various ways, wherever there is the means of indulging it. And therefore as an adjunct to the spiritual organisation, Positivism will encourage a systematic manifestation of chivalrous feeling among the leaders of industry. Those among them who feel animated with the noble spirit of the heroes of the Middle Ages, will devote not their sword, but their wealth, their time, and if need be their whole energies to the defence of the oppressed in all classes. The objects of their generosity will principally be found, as in the Middle Ages, among the classes specially exposed to material suffering; that is to say among women, philosophers, and working men. It would be strange indeed for a system like Positivism, the main object of which is to strengthen the social spirit, not to appropriate the institution which is the noblest product of that spirit.

So far, then, the restoration of Chivalry is merely a reconstruction of the mediæval institution in a shape adapted to the altered state of ideas and feelings. In modern as in mediæval times, devotion of the strong to the weak follows as a natural consequence from the subordination of Politics to Morals. Now, as then, the spiritual power will be nobly seconded by members of the governing class in the attempt to bring that class to a stricter sense of social duty. But besides this, Feudal Chivalry had a deeper and more special purpose in reference to women.

And in this respect the superiority of Positivism is even more complete and obvious.

Feudalism introduced for the first time the worship of Woman. But in this it met with little support from Catholicism, and was in many respects thwarted by it. The habits of Christianity were in themselves adverse to real tenderness of heart; they only strengthened it indirectly, by promoting one of the indispensable conditions of true affection, purity of life. In all other respects Chivalry was constantly opposed by the Catholic system; which was so austere and anti-social, that it could not sanction marriage except as an infirmity necessary to tolerate, but hazardous to personal salvation. Even its rules of purity, valuable as they were, were often weakened by interested motives which seriously impaired their value. Consequently, notwithstanding all the noble and long-continued efforts of our mediæval ancestors, the institution of the worship of Woman was very imperfectly effected, especially in its relation to public life. Whatever Catholic apologists may say, there is every reason to believe that if Feudalism could have arisen before the decline of Polytheism, the influence of Chivalry would have been greater.

It was reserved for the more comprehensive system of Positivism, in which sound practice is always supported by sound theory, to give full expression to the feeling of veneration for women. In the new religion, while tenderness of heart is looked upon as the first of Woman's attributes, purity is held in due honour; its true source and its essential value, as the first condition of happiness and of moral growth, are for the first time clearly indicated. The shallow and sophistical views of marriage maintained in these unsettled times by men of narrow minds and coarse feelings, will be easily refuted by a more careful study of human nature. Even the obstacles presented by scientific materialism will rapidly disappear before the spread of Positivist morality. A physician of great sagacity, Hufeland, has remarked, with truth, that the well-known vigour of the knights of old times was a sufficient answer to men who talked of the physical dangers of continence. Positivism, dealing with this question in all its aspects, teaches that while the primary reason for insisting on purity is that it is essential to depth of affection, it has as close a connection with the

physical and intellectual improvement of the individual and the race as with our moral progress.

Positivism then, as the whole tendency of this chapter indicates, encourages, on intellectual as well as on moral grounds, full and systematic expression of the feeling of veneration for Women, in public as well as in private life, collectively as well as individually. Born to love and to be loved, relieved from the burdens of practical life, free in the sacred retirement of their homes, the women of the West will receive from Positivists the tribute of deep and sincere admiration which their life inspires. They will feel no scruple in accepting their position as spontaneous priestesses of Humanity; they will fear no longer the rivalry of a vindictive Deity. From childhood each of us will be taught to regard their sex as the principal source of human happiness and improvement, whether in public life or in private.

The treasures of affection which our ancestors wasted upon mystical objects, and which these revolutionary times ignore, will then be carefully preserved and directed to their proper purpose. The enervating influence of chimerical beliefs will have passed away; and men in all the vigour of their energies, feeling themselves the masters of the known world, will feel it their highest happiness to submit with gratitude to the beneficent power of womanly sympathy. In a word, Man will in those days kneel to Woman, and to Woman alone.

The source from which these reverential feelings for the sympathetic sex proceeds is a clear appreciation in the other sex of benefits received, and a spirit of deep thankfulness for them. The Positivist will never forget that moral perfection, the primary condition of public and private happiness, is principally due to the influence of Woman over Man, first as mother, then as wife. Such a conviction cannot fail to arouse feelings of loving veneration for those with whom, from their position in society, he is in no danger of rivalry in the affairs of life. In proportion as the feminine vocation is better understood and more fully realised, will the Woman be regarded by the Man as the best impersonation of Humanity.

The practice of Prayer, so far from disappearing, is purified and strengthened in Positive religion.

Originating in spontaneous feelings of gratitude, the worship of Woman, when it has assumed a more systematic shape, will be valued for its own sake as a new instrument of happiness and moral growth. Inert as the tender sympathies are in Man,

it is most desirable to strengthen them by such exercise as the public and private institution of this worship will afford. And here it is that Positivists will find all the elevating influences which Catholicism derived from Prayer.

It is a common but very palpable error to imagine that Prayer is inseparable from the chimerical motives of self-interest in which it first originated. In Catholicism there was always a tendency to rise above these motives, so far at least as the principles of theology admitted. From St. Augustine downwards all the nobler spirits have felt more and more strongly, notwithstanding the self-absorbing tendencies of Christian doctrine, that Prayer did not necessarily imply petition. When sounder views of human nature have become prevalent, the value of this important function will be more clearly appreciated; and it will ultimately become of greater importance than ever, because founded on a truer principle. In the normal state of Humanity the moral efficacy of Prayer will no longer be impaired by thoughts of personal recompense. It will be simply a solemn out-pouring, whether in private or in public, of men's nobler feelings, inspiring them with larger and more comprehensive thoughts. As a daily practice, it is inculcated by Positivism as the best preservative against the selfish impulses and narrow ideas generated by the ordinary avocations of life. To men its value is even greater than to women; their life being less favourable to large views and generous sympathies, it is the more important to revive them at regular periods.

But Prayer would be of little value unless the mind could clearly define its object. The worship of Woman satisfies this condition, and may thus be of greater efficacy than the worship of God. True, the ultimate object of Positivist Prayer, as shown in the concluding chapter of this review, is Humanity. But some of its best moral effects would hardly be realised, if it were at once and exclusively directed to an object so difficult to conceive clearly. It is possible that Women with their stronger sympathies may be able to reach this stage without intermediate steps. However this may be, men certainly would not be able to do so; even the intellectual class, with all its powers of generalisation, would find it impossible. The worship of Woman, begun in private, and afterwards publicly

celebrated, is necessary in man's case to prepare him for any effectual worship of Humanity.

No one can be so unhappy as not to be able to find some woman worthy of his peculiar love, whether in the relation of wife or of mother; some one who in his solitary prayer may be present to him as a fixed object of devotion. Nor will such devotion, as might be thought, cease with death; rather, when its object has been rightly chosen, death strengthens it by making it more pure. The principle upon which Positivism insists so strongly, the union of the Present with the Past, and even with the Future, is not limited to the life of Society. It is a doctrine which unites all individuals and all generations; and when it has become more familiar to us, it will stimulate everyone to call his dearest memories to life; the spirit of the system being that the private life of the very humblest citizen has a close relation to his public duty. We all know how intellectual culture enables us to live with our great predecessors of the Middle Ages and of Antiquity, almost as we should do with absent friends. And if Intellect can do so much, will it not be far easier for the strong passion of Love to effect this ideal resurrection? We have already many instances where whole nations have shown strong sympathies or antipathies to great historical names, especially when their influence was still sensibly felt. There is no reason why a private life should not produce the same effect upon those who have been brought into contact with it. Moral culture has been conducted hitherto on such unsatisfactory principles, that we can hardly form an adequate notion of its results when Positivism has regenerated it, and has concentrated the affections as well as the thoughts of Man upon human life. To live with the dead is the peculiar privilege of Humanity, a privilege which will extend as our conceptions widen and our thoughts become more pure. Under Positivism the impulse to it will become far stronger, and it will be recognised as a systematic principle in private as well as in public life. Even the Future is not excluded from its application. We may live with those who are not yet born; a thing impossible hitherto simply for want of a true theory of history of scope sufficient to embrace at one glance the whole course of human destiny. There are numberless instances to prove that the heart of Man is capable of emotions which have no outward basis, except what Imagination has supplied. The

familiar spirits of the Polytheist, the mystical desires of the Monotheist, all point to a general tendency in the Past, which by the aid of a more complete and comprehensive philosophy, we shall be able in the Future to direct to a nobler and more real purpose. And thus even those who may be so unfortunate as to have no special object of love need not, on that account, be precluded from the act of worship; they may choose from the women of the past some type adapted to their own nature. Men of powerful imagination might even form their own more perfect ideal, and thus open out the path of the future. This, indeed, is what was often done by the knights of chivalrous times, simple and uninstructed as they were. Surely then, we with our fuller understanding and greater familiarity with the Past, should be able to idealise more perfectly. But whether the choice lie in the Past or in the Future, its efficacy would be impaired unless it remained constant to one object; and Positivism will indicate fixed objective laws calculated to control the natural tendency to versatility of feeling.

The worship of Woman a preparation for the worship of Humanity.

I have dwelt at some length upon the personal adoration of Woman under its real or ideal aspects, because upon it depends nearly all the moral value of any public celebration. Public assemblage in the temples of Humanity may strengthen and stimulate feelings of devotion, but cannot originate them. Unless each worshipper has felt in his own person deep and reverential love for those to whom our highest affections are due, a public service in honour of women would be nothing but a repetition of unmeaning formulas. But those whose daily custom it has been to give expression to such feelings in secret, will gain, by assembling together, all the benefit of more intense and more exalted sympathy. In my last letter to her who is for ever mine, I said: 'Amidst the heaviest anxieties which Love can bring, I have never ceased to feel that the one thing essential to happiness is that the heart shall be always nobly occupied.' And now that we are separated by Death, daily experience confirms this truth, which is moreover in exact accordance with the Positive theory of human nature. Without personal experience of Love no public celebration of it can be sincere.

In its public celebration the superiority of the new Religion is even more manifest than in the private worship. A system in which the social spirit is uniformly preponderant, is pecu-

liarly adapted to render homage for the social services of the sympathetic sex. When the knights of the Middle Ages met together, they might give vent to their personal feelings, and express to one another the reverence which each felt for his own mistress; but farther than this they could not go. And such personal feelings will never cease to be necessary. Still the principal object of public celebration is to express gratitude on the part of the people for the social blessings conferred by Woman, as the organ of that element in our nature on which its unity depends, and as the original source of moral power. In the Middle Ages such considerations were impossible, for want of a rational theory embracing the whole circle of social relations. Indeed the received faith was incompatible with any such conception, since God in that faith occupied the place really due to Humanity.

Exceptional women. Joan of Arc.

So naturally does celebration of this kind find its place in Positivism, that very anomalous cases are not excluded. The chief motive doubtless for public and private veneration is the mission of sympathy, which is Woman's peculiar vocation. But there have been remarkable instances of women whose life has been one of speculation, or even, what is in most cases still more foreign to their nature, of political activity. They have rendered real service to Humanity, and they should receive the honour that is due to them. Theology, from its absolute character, could not make such concessions; they would have weakened the efficiency of its most important social rules. Consequently Catholicism was compelled, though at first with sincere regret, to leave some of the noblest women without commemoration; which indeed would have been more injurious to its moral standard than beneficial to its policy. A signal instance is the Maid of Orleans, whose heroism saved France in the fourteenth century. Our great King Louis XI. applied very properly to the Pope for her canonisation, and no objection was made to his request. Yet practically it was never carried into effect. It was gradually forgotten; and the clergy soon came to feel a sort of dislike to her memory, which reminded them of nothing but their own social weakness. It is easy to account for this result; nor is any one really to blame for it. It was feared, not without reason, that to consider Joan of Arc as a saint might have the effect of spreading false and dangerous ideas of feminine duty. The difficulty was insuperable for any absolute

system, in which to sanction the exception is to compromise the rule. But in a relative system the case is different. It is even more inconsistent with Positive principles than it is with Catholic, for women to lead a military life, a life of all others the least compatible with their proper functions. And yet Positivists will be the first to do justice to this extraordinary heroine, whom theologians have been afraid to recognise, and whom metaphysicians, even in France, have had the hardihood to insult. The anniversary of her glorious martyrdom will be a solemn festival, not only for France but for Western Europe. For her work was not merely of national importance: the enslavement of France would have involved the loss of all the influence which France has exercised as the centre of the advanced nations of Europe. Moreover, as none of them are altogether clear from the disgrace of blackening her character, as Voltaire has done, all should aid in the reparation of it which Positivism proposes to institute. So far from her apotheosis having an injurious effect on female character, it will afford an opportunity of pointing out the anomalous nature of her career, and the rarity of the conditions which alone could justify it. It is a fresh proof of the advantages accruing to Morality from the relative character of Positivism, which enables it to appreciate exceptions without weakening rules.

The subject of the worship of Woman by Man raises a question of much delicacy; how to satisfy analogous feelings of devotion in the other sex. We have seen its necessity for men as an intermediate step towards the worship of Humanity; and women, stronger though their sympathies are, stand, it may be, in need of similar preparation. Yet certainly the direction taken should be somewhat different. What is wanted is that each sex should strengthen the moral qualities in which it is naturally deficient. Energy is a characteristic feature of Humanity as well as Sympathy; as is well shown by the double meaning of the word *Heart*. In Man Sympathy is the weaker element, and it requires constant exercise. This he gains by expression of his feelings of reverence for Woman. In Woman, on the other hand, the defective quality is Energy; so that should any special preparation for the worship of Humanity be needed, it should be such as to strengthen courage rather than sympathy. But my sex renders me incompetent to enter farther into the secret wants of Woman's heart. Theory

indicates a blank hitherto unnoticed, but does not enable me to fill it. It is a problem for women themselves to solve; and I should have reserved it for the noble fellow-worker, whose premature death will, in the future, as I trust, be universally mourned.

Throughout this chapter I have been keenly sensible of the intellectual loss resulting from our objective separation. True, I have been able to show that Positivism is a matter of the deepest concern to women, since it incorporates them in the progressive movement of modern times. I have proved that the part allotted to them in this movement is one which satisfies far more perfectly than Catholicism their highest aspirations for the Family or for Society. And yet I can hardly hope for much support from them until some woman shall come forward to interpret what I have said into language more adapted to their nature and habits of thought. Till then it will always be taken for granted that they are incapable even of understanding the new philosophy, notwithstanding all the natural affinities for it which I have shown that they possess.

All these difficulties had been entirely removed by the noble and loving friend to whom I have dedicated this new Treatise. The dedication is unusual in form, and some may think it overstrained. But my own fear is rather, now that five years have past, that my words were too weak for the deep gratitude which I now feel for her elevating influence. Without it the moral aspects of Positivism would have lain very long latent.

Clotilde de Vaux was gifted equally in mind and heart: and she had already begun to feel the power of the new philosophy to raise feminine influence from the decline into which it had fallen since the close of the Middle Ages, under modern revolutionary influences. Misunderstood everywhere, even by her own family, her nature was far too noble for bitterness. Her sorrows were as exceptional as they were undeserved; but her purity was even more rare than they; and it preserved her unscathed from all sophistical attacks on marriage, even before the true theory of marriage had come before her. In the only writing which she published, there is a beautiful remark, which to those who know the history of her life is deeply affecting: 'Great natures should always be above bringing their own sorrows upon others.' In this charming story, written before she knew anything of Positivism, she expressed a charac-

teristic, and, from such a judge, a most decisive opinion on the subject of Woman's vocation: 'Surely the true work of a woman is to provide a man with the comforts and delights of home, receiving in exchange from him the means of subsistence earned by his labours. I would rather see the mother of a poor family washing her children's linen, than see her earning a livelihood by her talents away from home. Of course I do not speak of women of extraordinary powers whose genius leads them out of the sphere of domestic duty. Such natures should have free scope given to them: for great minds are kindled by the exhibition of their powers.' These words coming from a young lady distinguished no less for beauty than for worth, are already a refutation of the subversive utopias now prevalent. But in a large work which she did not live to finish, she had intended to refute the attacks upon marriage contained in the works of an eloquent contemporary, to whom she was intellectually no less than morally superior. Her nature was of rare endowment, moved by noble impulse, and yet allowing its due influence to reason. When she was beginning to study Positivism she wrote to me: 'No one knows better than myself how weak our nature is, unless it has some lofty aim beyond the reach of passion.' A short time afterwards, writing with all the graceful freedom of friendship, she let fall a phrase of deep meaning, almost unawares: 'Our race is peculiarly one which must have duties, in order to form its feelings.'

With such a nature my Saint Clotilda was, as may be supposed, fully conscious of the moral value of Positivism, though she had only one year to give to its study. A few months before her death, she wrote to me: 'If I were a man, I should be your enthusiastic disciple; as a woman, I can but offer you my cordial admiration.' In the same letter she explains the part which she proposed to take in diffusing the principles of the new philosophy: 'It is always well for a woman to follow modestly behind the army of renovators, even at the risk of losing a little of her own originality.' She describes our intellectual anarchy in this charming simile: 'We are all standing as yet with one foot in the air over the threshold of truth.'

It is for women to introduce Positivism into the Southern nations.

With such a colleague, combining as she did qualities hitherto shared amongst the noblest types of womanhood, it would have been easy to induce her sex to co-operate in the regeneration of society. For she gave a perfect example of that normal

reaction of Feeling upon Reason which has been here set forward as the highest aim of Woman's efforts. When she had finished the important work on which she was engaged, I had marked out for her a definite yet spacious field of co-operation in the Positivist cause: a field which her intellect and character were fully competent to occupy. I mention it here, to illustrate the mode in which women may help to spread Positivism through the West; giving thus the first example of the social influence which they will afterwards exert permanently. What I say has special reference to Italy and to Spain. In other countries it only applies to individuals who, though living in an atmosphere of free thought, have not themselves ventured to think freely. Success in this latter case is so frequent, as to make me confident that the agencies of which I am about to speak may be applied collectively with the same favourable result.

The intellectual freedom of the West began in England and Germany; and it had all the dangers of original efforts for which at that time no systematic basis could be found. With the legal establishment of Protestantism, the metaphysical movement stopped. Its stagnation was a serious obstacle to subsequent progress; and is still, in the countries where Protestantism prevails, the chief impediment to all efficient renovation. Happily, France, the normal centre of Western Europe, was spared this so-called Reformation. She made up for the delay, by passing at one stride, under the impulse given by Voltaire, to a state of entire freedom of thought; and thus resumed her natural place as leader of the common movement of social regeneration. But the French, while escaping the inconsistencies and oscillations of Protestantism, have been exposed to all the dangers resulting from unqualified acceptance of revolutionary metaphysics. Principles of systematic negation have now held their ground with us too long; and therefore useful as they once were in preparing the way for social reconstruction, they are now a hindrance to it. It may be hoped that when the movement of free thought extends, as it assuredly will, to the two Southern nations, where Catholicism has been more successful in resisting Protestantism and Deism, it will be attended with less injurious consequences. If France was spared the Calvinistic stage, there seems no reason why Italy and even Spain should not be spared Voltairianism. As a compensation for this ap-

parent stagnation, they might pass at once from Catholicism to Positivism without halting for any length of time at the negative stage. These countries could not have originated the new philosophy, owing to their insufficient preparation; but as soon as it has taken root in France, they will probably accept it with extreme rapidity. Direct attacks upon Catholicism will not be necessary. The new religion will simply put itself into competition with the old by performing in a better way the same functions that Catholicism fulfils now, or has fulfilled in past times.

All evidence, especially the evidence of the poets, goes to prove that before Luther's time there was less belief in the South of Europe, certainly less in Italy, than in the North. And Catholicism, with all its resistance to the progress of thought, has never been able really to revive the belief in Christianity. We speak of Italy and Spain as less advanced; but the truth is that they only cling to Catholicism because it satisfies their moral and social wants better than any system with which they are acquainted. Morally they have more affinity to Positivism than other nations; because their feelings of fraternity have not been weakened by the industrial development which has done so much harm in Protestant countries. Intellectually, too, they are less hostile to the primary principle of Positive Polity; the separation of spiritual and temporal power. And therefore they will welcome Positivism as soon as they see that in all essential features it equals and surpasses the mediæval Church. Now as this question is almost entirely a moral one, their convictions in this respect will depend far more upon feeling than upon argument. Consequently, the work of converting them to Positivism is one for which women are peculiarly adapted. Positivism has been communicated to England by men. Holland, too, which has been the vanguard of Germany ever since the Middle Ages, has been initiated in the same way still more efficiently. But its introduction in Italy and Spain will depend upon the women of those countries; and the appeal to them must come, not from a Frenchman, but from a Frenchwoman; for heart must speak to heart. Would that these brief remarks might enable others to appreciate the inestimable worth of the colleague whom I had intended to write such an appeal; and that they might stimulate some one worthy to take her place!

Already, then, there is ground for encouragement. Already we have one striking instance of a woman ready to co-operate in the philosophical movement, which assigns to her sex a mission of the highest social consequence as the prelude to the function for which in the normal state they are destined. Such an instance, though it may seem now exceptional, does but anticipate what will one day be universal. Highly gifted natures pass through the same phases as others; only they undergo them earlier, and so become guides for the rest. The sacred friend of whom I speak had nothing that specially disposed her to accept Positivism, except the beauty of her mind and character, prematurely ripened by sorrow. Had she been an untaught working woman, it would perhaps have been still easier for her to grasp the general spirit of the new philosophy and its social purpose.

The result of this chapter is to show the affinity of the systematic element of the modifying power, as represented by philosophers, with women who form its sympathetic element; an affinity not less close than that with the people, who constitute its synergic element. The organisation of moral force is based on the alliance of philosophers with the people; but the adhesion of women is necessary to its completion. The union of all three initiates the movement of social regeneration which is to bring the revolution to a close. But more than this; their union is at once an inauguration of the final order of society. Each of these three elements will be acting as it will be called upon to act in the normal state, and will be occupying its permanent position relatively to the temporal power. The philosophic class whose work it is to combine the action of the other two classes, will find valuable assistance from women in every family, as well as powerful co-operation from the people in every city. The result will be a combination of all the classes who stand apart from political administration, formed with the view of subjecting all practical measures to the fixed rules of universal morality. Exceptional cases will arise where moral influence is insufficient; in these it will be necessary for the people to interfere actively. But philosophers and women are dispensed from such interference. Direct action would be most injurious to their powers of sympathy or meditation. They can only preserve these powers by keeping clear of all positions of political authority.

But the moral force resulting from this combined action, while more efficient than that of the Middle Ages, will impose conditions of great difficulty on its systematic organs. From the Priest of Humanity high powers of intellect are required; and a heart worthy of such intellect. To secure the support of women, and the co-operation of the people, he must have the sympathy and purity of the first, the energy and disinterestedness of the second. Such natures are rare; yet without them the new spiritual power cannot obtain that ascendancy over society to which Positivism aspires. And with all the agencies, physical or moral, which can be brought to bear, we shall have to acknowledge that the exceeding imperfection of human nature interposes permanent obstacles to the object for which Positivism strives, the victory of social sympathy over self-love.

CHAPTER V.

THE RELATION OF POSITIVISM TO ART.

Positivism when complete is as favourable to imagination, as, when incomplete, it was unfavourable to it.

THE essential principles and the social purpose of the only philosophy by which the revolution can be brought to a close, are now before us. We have seen too that energetic support from the People and cordial sympathy from Women are necessary to bring this philosophic movement to a practical result. One further condition yet remains. The view here taken of human life as regenerated by this combination of efforts, would be incomplete if it did not include an additional element, with which Positivism, as I have now to show, is no less competent to deal. We have spoken already of the place which Reason occupies in our nature; its function being to subordinate itself to Feeling for the better guidance of the Active powers. But in the normal state of our nature it has also another function connected with Imagination; to which it yields no passive obedience, but which it stimulates at the same time that it controls. The esthetic faculties are far too important to be disregarded in the normal state of Humanity; therefore they must not be omitted from the system which aims to introduce that state. All these conditions, in spite of unfounded prejudices to the contrary, are thoroughly satisfied by Positivism. It furnishes, as may readily be shown, the only true foundation of modern Art, which since the Middle Ages has been cultivated without fixed principles or lofty purpose.

The reproach that Positivism is incompatible with Art arises simply from the fact that almost every one is in the habit of confounding the philosophy itself with the scientific studies on which it is based. The charge only applies to the Positivist spirit in its preliminary phase of disconnected specialities, a phase which scientific men of the present day are making such mischievous efforts to prolong. Nothing can be more fatal to the fine arts than the narrow views, the overstraining of analysis,

the abuse of the reasoning faculty, which characterise the scientific investigation of the present day; to say nothing of their injurious effects upon moral progress, the first condition of esthetic development. But all these defects necessarily disappear when the Positive spirit becomes more comprehensive and systematic; which is the case as soon as it embraces the higher subjects in the encyclopedic scale of sciences. When it reaches the study of Society, which is its true and ultimate sphere, its uniform adherence to Fact leads it to deal with the conceptions of Poetry, as well as with the operations of Feeling: since its object must then be to give a faithful and complete representation of human nature under its individual, and still more under its social aspects. Hitherto Positive Science had avoided these two subjects: but their charm is such that, when the study of them has been once begun, it cannot fail to be prosecuted with ardour; and their proper place in the constitution of Man and of Society will then be recognised. And thus a more complete and systematic culture brings the long divorce of Reason from Imagination and Feeling to a natural close.

To those who have studied the foregoing chapters with attention, the view that the new philosophy is unfavourable to Art will be obviously unjust. Supposing even that there were no important functions specially assigned to the fine arts in the Positive system, yet indirectly the leading principles of the system, its social purpose, and the influences by which it is propagated, are all most conducive to the interests of Art. To demonstrate, as Positivism alone of all philosophies has done, the subordination of the intellect to the heart, and the dependence of the unity of human nature upon Feeling, is to stimulate the esthetic faculties; because Feeling is their true source. To propound a social doctrine by which the Revolution is brought to a close, is to remove the principal obstacle to the growth of Art, and to open a wide field and a firm foundation for it, by establishing fixed principles and modes of life; in the absence of which Poetry can have nothing noble to narrate or to inspire. To exhort the working classes to seek happiness in calling their moral and mental powers into constant exercise, and to give them an education the principal basis of which is esthetic, is to place Art under the protection of its natural patrons.

But one consideration is of itself sufficient for our purpose. We have but to look at the influence of Positivism upon Women, at its tendency to elevate the social dignity of their sex, and at the same time to strengthen all family ties. Now of all the elements of which society is constituted, Woman certainly is the most esthetic, alike from her nature and her position; and both her position and her nature are raised and strengthened by Positivism. We receive from women, not only our first ideas of Goodness, but our first sense of Beauty; for their own sensibility to it is equalled by their power of imparting it to others. We see in them every kind of beauty combined; beauty of mind and character as well as of person. All their actions, even those which are unconscious, exhibit a spontaneous striving for ideal perfection. And their life at home, when free from the necessity of labouring for a livelihood, cannot but be favourable to these natural tendencies. Living as they do for affection, they cannot fail to feel aspirations for all that is highest, in the world around them first, and then also in the world of imagination. A doctrine, then, which regards women as the originators of moral influence in society, and which places the groundwork of education under their charge, cannot be suspected of being unfavourable to Art.

Leaving these prejudices, we may now examine the mode in which the incorporation of Art into the modern social system will be promoted by Positivism. In the first place systematic principles of Art will be laid down, and its proper function clearly defined. The result of this will be to call out new and powerful means of expression, and also new organs. I may observe that the position which Art will occupy in the present movement of social regeneration is already an inauguration of its final function; as we saw in the analogous cases of the position of women and of the working classes.

Esthetic talent is for the adornment of life, not for its government.

But before touching on this question, it will be well to rectify a prevalent misconception on the subject, one of the many consequences of our mental and moral anarchy. I refer to the exaggeration of the influence of Art; an error which tends to vitiate all the views now held with regard to it.

All poets of real genius, from Homer to Corneille, had always considered their work to be that of beautifying human life, and so far, of elevating it. Its direction they had never supposed to fall within their province. Indeed no sane man

would lay it down as a proposition that Imagination should control the other mental faculties. It would imply really that the normal condition of the intellect was insanity; insanity being definable as that state of mind in which subjective inspirations are stronger than objective judgments. It is a static law of our nature, which has never been permanently suspended, that the faculties of Representation and Expression should be subordinate to those of Conception and Co-ordination. Even in cerebral disturbances the law holds good. The relation with the external world is perverted, but the original correlation of the internal mental functions remains unaffected.

The foolish vanity of the later poets of antiquity led some of them into errors somewhat resembling those which now prevail on this point. Still in Polytheistic society artists were at no time looked upon as the leading class, notwithstanding the esthetic character of the accepted creeds. If proofs were necessary, Homer's poem, especially the Odyssey, would show how secondary the influence of the fine arts was upon society, even when the priesthood had ceased to control them. Plato's Utopia, written when Polytheism was in its decline, represented a state in which the interference of poets was systematically prevented. Mediæval Monotheism was still less disposed to overrate the importance of Art, though its true value was recognised more generally than it had ever been before. But with the decline of Catholicism, germs of errors showed themselves, from which even the extraordinary genius of Dante was not free. The revolutionary influences of the last five centuries have developed these errors into the delirium of self-conceit exhibited by the poets and literary men of our time. Theology having arrived at its extreme limits, and no conception having yet arisen of the Positive state, the negative condition of the Western Republic has become aggravated to an unheard-of extent. Rules and institutions which had formerly controlled the most headstrong ambition, have fallen rapidly into discredit. And as the principles of social order disappeared, artists, and especially poets, the leading class among them, stimulated by the applause which they received from their uninstructed audience, fell into the error of seeking political influence. Incompatible as all mere criticism must be with true poetry, modern Art since the fourteenth century has participated more and more actively in the destruction of the old system. Until,

however, Negativism had received its distinct shape and character from the revolutions of the sixteenth and seventeenth centuries, the influence of Art for destructive purposes was but an auxiliary of that exercised by metaphysicians and legists. But in the eighteenth century, when negativism began to be propagated boldly in a systematic form, the case was changed, and literary ambition asserted itself more strongly. The men of learning who had hitherto formed the vanguard of the destructive movement, were replaced by mere writers, men whose talents were poetical rather than philosophical, but who had, intellectually speaking, no real vocation. When the crisis of the Revolution came, this heterogeneous class took the lead in the movement, and naturally stepped into all political offices; a state of things which will continue until there is a more direct and general movement of reorganisation.

The political influence of literary men a deplorable sign and source of anarchy.

This is the historical explanation, and at the same time the refutation, of the subversive schemes so prevalent in our time, of which the object is to establish a sort of aristocracy of literary pedants. Such day-dreams of unbridled self-conceit find favour only with the metaphysical minds who cannot sanction exceptional cases without making them into an absolute rule. If philosophers are to be excluded from political authority, there is still greater reason for excluding poets. The mental and moral versatility which makes them so apt in reflecting the thoughts and feelings of those around them, utterly unfits them for being our guides. Their natural defects are such as nothing but rigorous and systematic education can correct; they are, therefore, certain to be peculiarly prominent in a time when deep convictions of any kind are so rare. Their real vocation is to assist the spiritual power as accessory members; and this involves their renouncing all ideas of government, even more strictly than philosophers themselves. Philosophers, though unfit for action, are adapted for counsel; but the poet has very little to do with either. His special function is to idealise and to stimulate; and to do this well he must concentrate his energies exclusively upon it. It is a large and noble field, amply sufficient to absorb men who have a real vocation for it. Accordingly, in the great artists of former times we see comparatively few traces of this extravagant ambition. It comes before us in a time when, owing to the absence of regular habits of life and fixed convictions, art of the

highest order is impossible. The poetic writers of these times, whether misdirected or incapable, would turn their energies into a new direction were Society again brought under the influence of a universal doctrine, so that real poetry should again become possible. Till then they will continue to waste their efforts and ruin their character in worthless political agitation, a career more favourable to specious mediocrity than to real genius.

In the normal state of human nature, Imagination is subordinate to Reason as Reason is to Feeling. Any prolonged inversion of this natural order is both morally and intellectually dangerous. The reign of Imagination would be still more disastrous than the reign of Reason; only that it is even more incompatible with the practical conditions of human life. But chimerical as it is, the mere pursuit of it may do much individual harm by substituting artificial excitement, and in too many cases affectation of feeling, for deep and spontaneous emotion. Viewed politically, nothing can be worse than this undue preponderance of esthetic considerations caused by the uncontrolled ambition of artists and writers. The true object of Art, which is to charm and elevate human life, is gradually lost sight of. By being held out as the aim and object of existence, it degrades the artist and the public equally, and is therefore certain to degenerate. It loses all its higher tendencies, and is reduced either to a sensuous pleasure, or to a mere display of technical skill. Admiration for the Arts, which when kept in its proper place has done so much for modern life, may become a deeply corrupting influence, if it becomes the paramount consideration. It is notorious what an atrocious custom prevailed in Italy for several centuries, simply for the sake of improving men's voices. Art, the true purpose of which is to strengthen our sympathies, leads when thus degraded to a most abject form of selfishness; in which enjoyment of sounds or forms is held out as the highest happiness, and utter apathy prevails as to all questions of social interest. So dangerous is it intellectually, and still more so morally, for individuals, and above all, for societies to allow esthetic considerations to become unduly preponderant; even when they spring from a genuine impulse. But the invariable consequence to which this violation of the first principles of social order leads, is the success of mediocrities who acquire technical skill by long practice.

Thus it is that we have gradually fallen under the discreditable influence of men who were evidently not competent for any but subordinate positions, and whose preponderance has proved as injurious to art as it has been to Philosophy and Morality. A fatal facility of giving expression to what is neither believed nor felt, gives temporary reputation to men who are as incapable of originality in Art as they are of grasping any new principle in science. It is the most remarkable of all the political anomalies caused by our revolutionary position; and the moral results are most deplorable, unless when, as rarely happens, the possessor of these undeserved honours has a nature too noble to be injured by them. Poets are more exposed to these dangers than other artists, because their sphere is more general and gives wider scope for ambition. But in the special arts we find the same evil in a still more degrading form; that of avarice, a vice by which so much of our highest talent is now tainted. Another signal proof of the childish vanity and uncontrolled ambition of the class is, that those who are merely interpreters of other men's productions claim the same title as those who have produced original works.

Such are the results of the extravagant pretensions which artists and literary men have gradually developed during the last five centuries. I have dwelt upon them because they constitute at present serious impediments to all sound views of the nature and purposes of Art. My strictures will not be thought too severe by really esthetic natures, who know from personal experience how fatal the present system is to all talent of a high order. Whatever the outcry of those personally interested, it is certain that in the true interest of Art the suppression of mediocrity is at least as important as the encouragement of talent. True taste always implies distaste. The very fact that the object of Art is to foster in us the sense of perfection, implies that all true connoisseurs will feel a thorough dislike for feeble work. Happily there is this privilege in all masterpieces, that the admiration aroused by them endures in its full strength for all time; so that the plea which is often put forward of keeping up the public taste by novelties which in reality injure it, falls to the ground. If I may refer to my own experience, I may say that for thirteen years I have been accustomed on principle as well as from inclination, to restrict my reading almost entirely

to the great Occidental poets, without feeling the smallest curiosity for the works of the day which are brought out in such mischievous abundance.

Theory of Art.

Guarding ourselves, then, against errors of this kind, we may now proceed to consider the esthetic character of Positivism. In the first place it leads us naturally to the true theory of Art; a subject which has never yet been satisfactorily treated except with regard to certain special aspects. The theory here offered is based on the subjective principle of the new philosophy, on its objective dogma, and on its social purpose; as set forward in the two first chapters of this work.

Art is the idealised representation of Fact.

Art may be defined as an ideal representation of Fact; its purpose being to cultivate our sense of perfection. Its sphere therefore is co-extensive with that of Science. Both deal in their own way with the world of Fact; the one explains it, the other beautifies it. The contemplations of the artist and of the man of science follow the same encyclopedic law; they begin with the simple objects of the external world; they gradually rise to the complicated facts of human nature. I pointed out in the second chapter that the scientific scale, the scale, that is, of the True, coincided with that of the Good: we now see that it coincides with that of the Beautiful. Thus between these three great creations of Humanity, philosophy, polity, and poetry, there is the most perfect harmony. The first elements of beauty, that is to say, order and magnitude, are visible in the inorganic world, especially in the heavens; and they are there perceived with greater distinctness than where the phenomena are more complex and less uniform. The higher degrees of beauty will hardly be recognised by those who are insensible to this its simplest phase. But as in philosophy we only study the inorganic world as a preliminary to the study of Man; so, but to a still greater extent, is it with poetry. In polity the tendency is similar, but less apparent. Here we begin with material progress; we proceed to physical and subsequently to intellectual progress; but it is long before we arrive at the ultimate goal, moral progress. Poetry passes more rapidly over the three preliminary stages, and rises with less difficulty to the contemplation of moral beauty. Feeling, then, is essentially the sphere of poetry. And it supplies not the end only, but the means. Of all the phenomena which relate to man, human affections

are the most modifiable, and therefore the most susceptible of idealisation. Their higher complexity leading, in accordance with the positivist law, to greater imperfection, there is also wider scope for improvement. Now the act of expression, however imperfect, reacts powerfully upon these functions, which from their nature are always seeking some external vent. Every one recognises the influence of language upon thoughts: and surely it cannot be less upon feelings, since in them the need of expression is greater. Consequently all esthetic study, even if purely imitative, may become a useful moral exercise, by calling sympathies and antipathies into healthy play. The effect is far greater when the representation, passing the limits of strict accuracy, is suitably idealised. This indeed is the characteristic mission of Art. Its function is to construct types of the noblest kind, by the habitual contemplation of which our feelings and thoughts may be elevated. That the portraiture should be exaggerated follows from the definition of Art; it should surpass realities so as to stimulate us to amend them. Great as the influence is of these poetic emotions on individuals, they are far more efficacious when brought to bear upon public life; not only from the greater importance of the subject matter, but because each individual impression is rendered more intense by combination.

Poetry is intermediate between Philosophy and Polity.

Thus Positivism explains and confirms the view ordinarily taken of Poetry, by placing it midway between Philosophy and Polity; issuing from the first and preparing the way for the second.

Even Feeling itself, the highest principle of our existence, accepts the objective dogma of Philosophy, that Humanity is subject to the order of the external world. And Imagination on still stronger grounds must accept the same law. The ideal must always be subordinate to the real; otherwise feebleness as well as extravagance is the consequence. The statesman who endeavours to improve the existing order, must first study it as it exists. And the poet, although his improvements are but imagined, and are not supposed capable of realisation, must do likewise. True, in his fictions he will transcend the limits of the possible, while the statesman will keep within those limits; but both have the same point of departure, namely, the study of the facts of the case. In our artificial improvements we should never aim at anything more than wise modification of

the natural order; we should never attempt to subvert it. And though Imagination has a wider range for its pictures, they are yet subject to the same fundamental law, imposed by Philosophy upon Polity and Poetry alike. Even in the most poetic ages this law has always been recognised, only the external world was interpreted then very differently from now. We see the same thing every day in the mental growth of the child. As his notions of fact change, his fictions are modified in conformity with these changes.

But while Poetry depends upon Philosophy for the principles on which its types are constructed, it influences Polity by the direction which it gives to those types. In every operation that man undertakes, he must imagine before he executes, as he must observe before he imagines. He can never produce a result which he has not conceived first in his own mind. In the simplest application of mechanics or geometry he finds it necessary to form a mental type, which is always more perfect than the reality which it precedes and prepares. Now none but those who confound poetry with verse-making can fail to see that this conception of a type is the same thing as esthetic imagination, under its simplest and most general aspect. Its application to social phenomena, which constitute the chief sphere both of Art and of Science, is very imperfectly understood as yet, and can hardly be said to have begun, owing to the want of any true synthesis. Its real value, under proper control, will be in regulating the formation of social Utopias; subordinating them to the natural order of the future as revealed by the past. Utopias are to the Art of social life what geometrical and mechanical types are to their respective arts. Here their necessity is universally recognised; and surely the necessity cannot be less in problems of such far greater intricacy. Accordingly we see that, notwithstanding the empirical condition in which political art has hitherto existed, every great change has been ushered in, one or two centuries beforehand, by some corresponding Utopia; the product of the esthetic genius of Humanity working under an imperfect sense of the circumstances and requirements of the case. Positivism, far from laying an interdict on Utopias, tends rather to facilitate their employment and their influence as a normal element in society. Only, as in the case of all other products of imagination, they must always remain subordinated to the actual laws of social existence. And

thus by giving a systematic sanction to this poetry, as it may be called, of politics, most of the dangers which now surround it will disappear. Its present extravagances, arising simply from the absence of some philosophical principle to control it, need not be regarded otherwise than with indulgence.

The whole of this theory may be summed up in the double meaning of the word so admirably chosen to designate our esthetic functions. The word *Art* is a remarkable instance of the popular instinct from which language proceeds, and which is far more enlightened than cultivated conceit is willing to suppose. It indicates, however vaguely, a sense of the true position of Poetry, midway between Philosophy and Polity, but with a closer relation to the latter. True, in the case of the technical arts the improvements proposed are practically realised, while those of the fine arts remain imaginary. Poetry, however, does produce one result of an ndirect but most essential kind; it does actually modify our moral nature. If we include oratory, which is only Poetry in a simpler phase, though often worthless enough, we find its influence exerted in a most difficult and critical task, that of arousing or calming our passions; and this not arbitrarily, but in accordance with the fixed laws of their action. Here it has been always recognised as a moral agency of great power. On every ground, then, Poetry seems more closely related to practical than to speculative life. For its practical results are of the most important and comprehensive nature. Whatever the utility of other arts, material, physical, or intellectual, they are only subsidiary or preparatory to that which in Poetry is the direct aim, moral improvement. In the Middle Ages it was common in all Western languages to speak of it as a science; science properly so called being at that time hardly appreciable. But as soon as both artistic and scientific genius had become more fully developed, their distinctive features were more clearly recognised, and finally the name of Art was appropriated to the whole class of poetic functions. The fact is, at all events, an argument in favour of the Positive theory of idealisation, as standing midway between theoretical inquiry and practical result.

Art calls each element of our nature into harmonious action.

Evidently, then, it is in Art that the unity of human nature finds its most complete and most natural representation. For Art is in direct relation with the three orders of phenomena by which human nature is characterised; Feelings, Thoughts, and

Actions. It originates in Feeling; even more obviously than is the case with Philosophy and Polity. It has its basis in Thought, and its end is Action. Hence its power of exerting an influence for good alike on every phase of our existence, whether personal or social. Hence, too, its peculiar attribute of giving equal pleasure to all ranks and ages. Art invites the thinker to leave his abstractions for the study of real life; it elevates the practical man into a region of thought where self-love has no place. By its intermediate position it promotes the mutual reaction of Affection and Reason. It stimulates feeling in those who are too much engrossed with intellectual questions; it strengthens the contemplative faculty in natures whose sympathy predominates. It has been said of Art that its province is to hold a mirror to nature. The saying is usually applied to social life where its truth is most apparent. But it is no less true of every aspect of our existence; for under every aspect it may be a source of Art, and may be represented and modified by it. Turning to Biology for the cause of this sociological relation, we find it in the relation of the muscular and nervous systems. Our motions, involuntary at first, and then voluntary, indicate internal impressions, moral impressions more especially; and as they proceed from them, so they react upon them. Here we find the first germ of a true theory of Art. Throughout the animal kingdom language is simply gesticulation of a more or less expressive kind. And with man esthetic development begins in the same spontaneous way.

Three stages in the esthetic process: Imitation, Idealisation, Expression.

With this primary principle we may now complete our statical theory of Art, by indicating in it three distinct degrees or phases. The fine arts have been divided into imitative and inventive; but this metaphysical distinction has no real foundation. Art always imitates, and always idealises. True, as the real is in every case the source of the ideal, art begins at first with simple Imitation. In the childhood whether of man or of the race, as also with the lower animals, servile imitation, and that of the most insignificant actions, is the only symptom of esthetic capacity. No representation, however, has at present any claim to the title of Art (although from motives of puerile vanity the name is often given to it), except so far as it is made more beautiful, that is to say, more perfect; thus rendering the representation in reality more faithful, because

the principal features are brought prominently forward, instead of being obscured by a mass of unmeaning detail. This it is which constitutes Idealisation; which since the time of the great master-pieces of antiquity has become more and more the characteristic feature of esthetic productions. But in recognising the superiority of Idealisation as the second stage of Art, we must not forget the necessity of its first stage, Imitation. Without it neither the origin nor the nature of Art could be correctly understood.

In addition to the creative process which is the chief characteristic of Art, there is a third function which, though not absolutely necessary in its imitative stage, becomes so in its ideal stage. I mean the function of Expression strictly so-called, without which, the product of imagination could not be communicated to others. Language, whether expressed in sound or form, is the last stage of the esthetic operation, and it does not always bear a due proportion to the inventive faculty. When it is too defective, the sublimest creations may be ranked lower than they deserve, owing to the failure of the poet to communicate his thought completely. Great powers of style may, on the other hand, confer unmerited reputation, which however does not endure; as in the case of the preference too long continued of Racine to Corneille.

So long as Art is confined to imitation, no special language is required; imitation takes its place. But as soon as the representation has become idealised by heightening some features and suppressing or altering others, the picture exists in the first instance for its composer only; and its communication to the world requires additional labour devoted exclusively to Expression. In this final process, so necessary to the complete success of his work, the poet moulds his signs upon his inward type; just as he began at first by adapting them to external facts. So far there is some truth in Grétry's principle that song is derived from speech by the intermediate stage of declamation. The same principle has been applied to all the special arts; it might also be applied to Poetry, oratory being the link between verse and prose. These views, however, are somewhat modified by the historical spirit of the new philosophy. The relation of the two stages should be inverted, at least with reference to those primitive times when Art and Language first arose.

In their origin all our faculties of expression had an esthetic character; the only expressions being those that resulted from strong internal experience. Feeling had, in primitive times at all events, far more to do with these faculties than Thought, being a far stronger stimulant to external demonstration. Even in the most highly wrought languages, where, in consequence of social requirements, reason has to a great extent encroached upon emotion, we see evidence of this truth. There is a musical element in the most ordinary conversation. Listening carefully to a lecture on the most abstruse mathematical problem, we shall hear intonations which proceed obviously from the heart rather than the head, and which are indications of character even in the most unimpassioned speaker. Biology at once explains this law, by teaching that the stimulus to the muscles used in expression, whether vocal or gesticulatory, comes principally from the affective region of the brain; the speculative region being too inert to produce muscular contractions for which there is no absolute necessity. Accordingly, Sociology regards every language as containing in its primitive elements all that is spontaneous and universal in the esthetic development of Humanity; enough, that is, to satisfy the general need of communicating emotion. In this common field the special arts commence, and they ultimately widen it. But the operation is the same in its nature, whether carried on by popular instinct or by individuals. The final result is always more dependent on feeling than on reason, even in times like these, when the intellect has risen in revolt against the heart. Song, therefore, comes before Speech; Painting before Writing; because the first things we express are those which move our feelings most. Subsequently the necessities of social life oblige us to employ more frequently, and ultimately, to develop, those elements in painting or in song, which relate to our practical wants and to our speculative faculties so far as they are required for supplying them; these forming the topics of ordinary communication. Thus the emotion from which the sign had originally proceeded becomes gradually effaced; the practical object is alone thought of, and expression becomes more rapid and less emphatic. The process goes on until at last the sign is supposed to have originated in arbitrary convention; though, if this were the case, its universal and spontaneous adoption would be inexplicable. Such, then, is the sociological theory of

Language, on which I shall afterwards dwell more fully. I connect it with the whole class of esthetic functions, from which in the lower animals it is not distinguished. For no animal idealises his song or gesture so far as to rise to anything that can properly be called Art.

Classification of the arts on the principle of decreasing generality, and increasing intensity.

To complete our review of the philosophy of Art under its statical aspects we have now only to speak of the order in which the various arts should be classified. Placed as Art is midway between Theory and Practice, we may apply the same principle, that of decreasing generality, which I have long ago shown to be applicable to all Positive classification. We have already obtained from it a scale of the Beautiful, answering in most points to that which was first laid down for the True, and which we applied afterwards to the Good. By following it in the present instance, we shall be enabled to range the arts in an order of conception and succession analogous to that indicated in my philosophical treatise for the various branches of science and industry.

The arts then should be classified by the decreasing generality and the increasing intensity of their modes of expression; thus involving also increasing technicality. In its highest term the esthetic scale connects itself with the scientific scale; and in its lowest, with the industrial scale. This is in conformity with the position assigned to Art, intermediate between philosophy and practical life. Art never becomes disconnected from human interests; but as it becomes less general and more technical, its relation with our higher attributes becomes less intimate, and it is more dependent on inorganic Nature, so that at last the kind of beauty depicted by it is merely material.

Poetry.

On these principles of classification we must give the first place to Poetry, properly so called, as being the most general and least technical of the arts, and as being the basis on which all the rest depend. The impressions which it produces are less intense than those of the rest, but its sphere is evidently wider, since it embraces every side of our existence, whether individual, domestic, or social. Poetry, like the special arts, has a closer relation with actions and impulses than with thoughts. Yet the most abstract conceptions are not excluded from its sphere; for not merely can it improve the language in which they are expressed, but it may add to their intrinsic beauty. It is, on the whole, the most popular of all the arts, both on

account of its wider scope, and also because, its instruments of expression being taken directly from ordinary language, it is more generally intelligible than any other. True, in the highest kind of poetry versification is necessary; but this cannot be called a special art. The language of Poetry, although distinct in form, is in reality nothing but the language of common men more perfectly expressed. The only technical element in it, prosody, is easily acquired by a few days' practice. So intimate is the connection with the language of common life that no poet has ever been able to write with effect in a foreign or a dead language. And not only is this noblest of Arts more comprehensive, more spontaneous, more popular than the rest, but it surpasses them in that which is the characteristic feature of all art, Ideality. Poetry is the art which idealises the most, and imitates the least. For these reasons it has always held the first place among the arts; a view which will be strengthened in proportion as we attach greater importance to Idealisation and less to mere expression. In expression it is inferior to the other arts, which represent such subjects as fall within their compass with greater intensity. But it is from Poetry that these subjects are usually borrowed.

Music.

The first term of the series being thus determined, the other arts may at once be ranked according to the degree of their affinity with Poetry. Let us begin by distinguishing the different senses to which they appeal; and we shall find that our series proceeds on the principle which biologists, since Gall's time, have adopted for the classification of the special senses, the principle of decreasing sociability. There are only two senses which can be called esthetic; namely, Sight and Hearing: the others having no power of raising us to Idealisation. The sense of smell can, it is true, enable us to associate ideas; but in man, it exists too feebly for artistic effects. Hearing and Sight correspond to the two modes of natural language, voice and gesture. From the first arises the art of Music; the second, which however is less esthetic, includes the three arts of form. These are more technical than Music; their field is not so wide, and moreover they stand at a greater distance from poetry; whereas Music remained for a long time identified with it. Another distinction is that the sense to which music appeals performs its function involuntarily; and this is one reason why the emotions which it calls forth are more spon-

taneous and more deep, though less definite, than in the case where it depends on the will whether we receive the impression or not. Again, the difference between them answers to the distinction of Time and Space. The art of sound represents succession; the arts of form, coexistence. On all these grounds music should certainly be ranked before the other special arts, as the second term of the esthetic series. Its technical difficulties are exaggerated by pedants, whose interest it is to do so; in reality, special training is less needed for its appreciation, and even for its composition, than in the case of either painting or sculpture. Hence it is in every respect more popular and more social.

Painting, Sculpture, Architecture.

Of the three arts which appeal to the voluntary sense of sight, and which present simultaneous impressions, Painting, on the same principle of arrangement, holds the first rank, and Architecture the last; Sculpture being placed between them. Painting alone employs all the methods of visual expression, combining the effects of colour with those of form. Whether in public or private life, its sphere is wider than that of the other two. More technical skill is required in it than in music, and it is harder to obtain; but the difficulty is less than in Sculpture or in Architecture. These latter idealise less, and imitate more. Of the two, Architecture is the less esthetic. It is far more dependent on technical processes; and indeed most of its productions are rather works of industry than works of art. It seldom rises above material beauty: moral beauty it can only represent by artifices, of which the meaning is often ambiguous. But the impressions conveyed by it are so powerful and so permanent, that it will always retain its place among the fine arts, especially in the case of great public buildings, which stand out as the most imposing record of each successive phase of social development. Never has the power of Architecture been displayed to greater effect than in our magnificent cathedrals, in which the spirit of the Middle Ages has been idealised and preserved for posterity. They exhibit in a most striking manner the property which Architecture possesses of bringing all the arts together into a common centre.

The conditions favourable to Art have never yet been combined.

These brief remarks will illustrate the method adopted by the new philosophy in investigating a systematic theory of Art under all its statical aspects. We have now to speak of its

action upon social life, whether in the final state of Humanity, or in the transitional movement through which that state is to be reached.

The Positive theory of history shows us at once, in spite of strong prejudices to the contrary, that up to the present time the progress achieved by Art has been, like that of Science and Industry, only preparatory: the conditions essential to its full development never having yet been combined.

Too much has been made of the esthetic tendencies of the nations of antiquity, owing to the free scope that was given to Imagination in constructing their doctrines. In fact Polytheism, from the time when its beliefs became incomprehensible, has been regarded as simply a work of art. But the long duration of its principles would be sufficient proof that they were not created by the poets, but that they emanated from the philosophic genius of Humanity working spontaneously, as explained in my theory of human development, in the only way that was then possible. All that Art did for Polytheism was to perform its proper function of rendering it more beautiful. It is quite true that the peculiar character of Polytheistic philosophy gave greater scope for the development of Art than has been afforded by any subsequent system. Consequently it is to this phase of theology that we can always trace the first steps of esthetic development, whether in society or in the individual. Yet Art was never really incorporated into the ancient order. Its free growth was impossible so long as it remained under the control of Theocracy, which, using it as an instrument, shackled its operations, owing to the stationary character of its dogmas. Moreover, the social life of antiquity was highly unfavourable to Art. The sphere of personal feelings and domestic affections was hardly open to it. Public life in ancient times had certainly vigorous and permanent features, and here there was a wider field. Yet even with Homer we feel that he would hardly have spent his extraordinary powers upon descriptions of military life, had there been nobler subjects for his genius. The only grand aspect, viewed socially, that war could offer, the system of incorporation instituted by Rome after a succession of conquests, could not then be foreseen. When that period arrived, ancient history was drawing to a close, and the only poetical tribute to this nobler policy was

Neither in Polytheism,

contained in a few beautiful lines of Virgil's Æneid[1], summed up in the remarkable expression,

Pacisque imponere morem.

Nor under the Mediæval system.

Mediæval society, notwithstanding irrational prejudices to the contrary, would have been far more favourable to the fine arts, could it have continued longer. I do not speak, indeed, of its dogmas; which were so incompatible with Art, as to lead to the strange inconsistency of giving a factitious sanction to Paganism in the midst of Christianity. By holding personal and chimerical objects before us as the end of life, Monotheism discouraged all poetry, except so far as it related to our individual existence; dealing with this in mystical poems of great beauty, which touched our deepest emotions, and to which nothing was wanting but greater perfection of form. All that Catholicism effected for Art in other respects was to secure a better position for it, as soon as the priesthood became strong enough to counteract the intellectual and moral defects of Christian doctrine. But the social life of the Middle Ages was far more esthetic than that of antiquity. War was still the prevailing occupation; but by assuming a defensive character, it had become far more moral, and therefore more poetic. Woman had acquired a due measure of freedom; and the free development of home affections was thus no longer restricted. There was a consciousness of personal dignity hitherto unknown, and yet quite compatible with social devotion, which elevated individual life in all its aspects. All these qualities were summed up in the noble institution of Chivalry; which gave a strong stimulus to Art throughout Western Europe, and diffused it more largely than in any former period. This movement was in reality, though the fact is not recognised as it should be, the source of modern Art. The reason for its short duration is to be found in the essentially transient and provisional character of mediæval society under all its aspects. By the time that its languages and habits had become sufficiently stable for the esthetic spirit to produce works of permanent value, Catholic Feudalism was already undermined by the growing force of the negative movement. The beliefs and modes of life offered for idealisation were seen to be declining: and neither the poet nor his hearers could feel those deep convictions which the highest purposes of Art require.

[1] Æneid, Lib. vi. ll. 756–854.

During the decline of Chivalry, Art received indirectly an additional impulse from the movement of social decomposition which has been going on rapidly for the last five centuries. In this movement all mental and social influences gradually participated. Negativism, it is true, is not the proper province of Art; but the dogmas of Christianity were so oppressive to it, that its efforts to shake off the yoke were of great service to the cause of general emancipation. Dante's incomparable work is a striking illustration of this anomalous combination of two contradictory influences. It was a situation unfavourable for art, because every aspect of life was rapidly changing and losing its character before there was time to idealise it. Consequently the poet had to create his own field artificially from ancient history, which supplied him with those fixed and definite modes of life which he could not find around him. Thus it was that for several centuries the Classical system became the sole source of esthetic culture; the result being that Art lost much of the originality and popularity which had previously belonged to it. That great master-pieces should have been produced at all under such unfavourable circumstances is the best proof of the spontaneous character of our esthetic faculties. The value of this procedure has been for some time entirely exhausted; and now that the negative movement has reached its extreme limits, there has only been left one service, of great temporary importance, for Art to render; the idealisation of Doubt itself. Such a phase of course admitted of but short duration. The best examples of it are the works of Byron and Göthe; the principal value of which has been that they have initiated Protestant countries into the unrestricted freedom of thought which emanated originally from French philosophy.

Much less in modern times.

Thus history shows that the esthetic development of Humanity has been the result of spontaneous tendencies rather than of systematic guidance. The mental conditions most favourable to it have never been fulfilled simultaneously with its social conditions. At the present time both are alike wanting. Yet there is no evidence that our esthetic faculties are on the decline. Not only has the growth of art proceeded in spite of every obstacle, but it has become more thoroughly incorporated into the life of ordinary men. In ancient times it was cultivated only by a small class, and was so little recognised as a component part of social organisation, that it did not even

enter into men's imaginary visions of a future existence. But in the Middle Ages the simplest minds were encouraged to cultivate the sense of beauty as one of the purest delights of human life; and it was held out as the principal occupation of the celestial state. From that time all classes of European society have taken an increasing interest in these elevating pleasures, beginning with poetry, and thence passing to the special arts, especially music, the most social of all. The influence of artists, even when they had no real claim to the title, has been on the increase; until at last the anarchy of the present time has introduced them to political power, for which they are utterly unqualified.

Under Positivism the conditions will all be favourable; owing to its fixity of principles, and nobler moral culture.

All this would seem to show that the greatest epoch of Art has yet to come. In this respect as in every other, the Past has but supplied the necessary materials for future reconstruction. What we have seen as yet is but a spontaneous and immature prelude; but in the manhood of our moral and mental powers the culture of Art will proceed on principles as systematic as the culture of Science and of Industry, both of which at present are similarly devoid of organisation. The regeneration of society will be incomplete until Art has been fully incorporated into the modern order. And to this result all our antecedents have been tending. A renewal of the esthetic movement so admirably begun in the Middle Ages, but interrupted by classical influences, will form a part of the great work which Positivism has undertaken; the completion and re-establishment of the Mediæval structure upon a firmer intellectual basis. And when Art is once restored to its proper place, its future progress will be unchecked, because, as I shall now proceed to show, all the influences of the final order, spontaneous or systematic, will be in every respect favourable to it. If this can be made clear, the poetic capabilities of Positive Philosophy will require no further proof.

As being the only rallying point now possible for fixed convictions, without which life can have no definite or permanent character, Positivism is on this ground alone indispensable to all further development of modern Art. If the poet and his readers are alike devoid of such convictions, no idealisation of life, whether personal, domestic, or social, is in any true sense possible. No emotions are fit subjects for Art unless they are felt deeply and arise spontaneously in all. When society has no marked intellectual or moral feature, Art, which is its mirror,

can have none either. And although the esthetic faculty is so innate in us that it never can remain inactive, yet its culture becomes in this case vague and objectless. The fact therefore that Positivism terminates the Revolution by giving decisive preponderance to the organic movement, is of itself enough to prove its beneficial influence upon Art.

Art, indeed, would profit by any method of reorganisation, whatever its nature. But the principle on which Positivism proposes to reconstruct is peculiarly favourable fo its growth. The opinions and the modes of life to which that principle conducts are precisely those most essential to esthetic development.

A more esthetic system cannot be imagined than one which teaches that Feeling is the basis on which the unity of human nature rests; and which assigns as the grand object of man's existence, progress in every direction, but especially moral progress. It may seem at first as if the tendency of the new philosophy was merely to make us more systematic. And systematisation is assuredly indispensable; but the sole object of it is to increase our sympathy and our synergic activity by supplying that fixity of principle which alone can form strong character. By teaching that the highest happiness is to aid in the happiness of others, Positivism invites the poet to his noblest function, the culture of generous sympathies; a subject far more poetic than the passions of hatred and oppression which hitherto have been his ordinary theme. A system which regards such culture as the highest object cannot fail to incorporate Poetry as one of its essential elements, and to give to it a far higher position than it has ever held before. Science, although it be the source from which the Positive system emanates, will be restricted to its proper function of supplying the objective basis for human prevision; thus giving to Art and Industry, which must always be the principal objects of our attention, the foundation they require. Positivism, substituting in every subject the relative point of view for the absolute, regarding, that is, every subject in its relation to Humanity, would not prosecute the study of the True beyond what is required for the development of the Good and the Beautiful. Beyond this point, scientific culture is a useless expenditure of time and a distraction from the great purposes of individual or public life. Subordinate as the ideal must ever be to the real, Art will yet

exercise a most salutary influence upon Science, as soon as we cease to study Science in an absolute spirit. In the very simplest phenomena, after reaching the degree of exactness which our wants require, there is always a certain margin of liberty for the imagination; and advantage may very well be taken of this to make our conceptions more beautiful and so far more useful. Still more available is this influence of the Beautiful on the True in the highest subjects, those which more immediately concern Humanity. Precision being here more difficult and at the same time less important, more room is left for esthetic considerations. In representing the great historical types for instance, Art has its place as well as Science. A society which devotes all its powers to making every aspect of life as perfect as possible, will naturally give preference to that kind of intellectual culture which is of all others the best calculated to heighten our sense of perfection.

Predisposing influence of education.

The tendency of Positivism to favour these the most energetic of our intellectual faculties and the most closely related to our moral nature, is apparent throughout its educational system. The reader will have seen in the third chapter that in Positive education more importance is attached to Art than to Science, as the true theory of human development requires. Science intervenes only to put into systematic shape what Art, operating under the direct influence of affection, has spontaneously begun. As in the history of mankind esthetic development preceded scientific development, so it will be with the individual, whose education on the Positive method does but follow the path first taken by the race. The only rational principle of our absurd classical system is its supposed tendency to encourage poetical training. The futility, however, of this profession is but too evident: the usual result of the system being to implant erroneous notions of all the fine arts, if not utter distaste for them. A striking illustration of its worthlessness is the idolatry with which for a whole century our French pedants regarded Boileau; a most skilful versifier, but of all our poets perhaps the least gifted with true poetic feeling. Positivist education will effect what classical education has attempted so imperfectly. It will familiarise the humblest working man or woman from childhood with all the beauties of the best poets; not those of his own nation merely, but of all the West. To secure the genuineness and efficiency of esthetic development,

attention must first be given to the poets who depict our own modern society. Afterwards, as I have said, the young Positivist will be advised to complete his poetical course, by studying the poets who have idealised antiquity. But his education will not be limited to poetry, it will embrace the special arts of sound and form, by which the principal effects of poetry are reproduced with greater intensity. Thus the contemplation and meditation suggested by Art, besides their own intrinsic charm, will prepare the way for the exercise of similar faculties in Science. For with the individual, as with the species, the combination of images will assist the combination of signs; signs in their origin being images which have lost their vividness. As the sphere of Art includes every subject of human interest, we shall become familiarised, during the esthetic period of education, with the principal conceptions that are afterwards to be brought before us systematically in the scientific period. Especially will this be true of historical studies. By the time that the pupil enters upon them, he will be already familiar with poetic descriptions of the various social phases and of the men who played a leading part in them.

Relation of Art to Religion.

And if Art is of such importance in the education of the young, it is no less important in the afterwork of education; the work of recalling men or classes of men to those high feelings and principles which, in the daily business of life, are so apt to be forgotten. In the solemnities, private or public, appointed for this purpose, Positivism will rely far more on esthetic impressions than on scientific explanations. Indeed the preponderance of Art over Science will be still greater than in education properly so called. The scientific basis of human conduct having been already laid down, it will not be necessary to do more than refer to it. The philosophic priesthood will in this case be less occupied with new conceptions, than with the enforcement of truth already known, which demands esthetic rather than scientific talent.

A vague presentiment of the proper function of Art in regulating public festivals was shown empirically by the Revolutionists. But all their attempts in this direction proved notorious failures; a signal proof that politicians should not usurp the office of spiritual guides. The intention of a festival is to give public expression to deep and genuine feeling; spontaneousness therefore is its first condition. Hence it is a matter

with which the magistrate is incompetent to deal; and even the spiritual adviser should only act as the systematic organ of impulses which already exist. Since the decline of Catholicism we have had no festivals worthy of the name; nor can we have them until Positivism has become generally accepted. Till then the temporal authority will continue to present unmeaning and undignified shows before discordant crowds, who are themselves the only spectacle worth beholding. Indeed the usurpation of this function by government is in many cases as tyrannical as it is irrational; arbitrary formulas are often imposed, which answer to no pre-existing feeling whatever. Evidently the direction of festivals is a function which more than any other belongs exclusively to the spiritual power, since it is that power which regulates the tendencies of which these festivals are the manifestation. Here its work is essentially esthetic. A festival even in private, and still more in public life, is or should be a work of art; its purpose being to express certain feelings by voice or gesture, and to idealise them. It is the most esthetic of all functions, since it involves usually a complete combination of the four special arts, under the presidence of the primary art, Poetry. On this ground governments have in most cases been willing to waive their official authority in this matter, and to be largely guided by artistic counsel, accepting even the advice of painters and sculptors in the default of poets of real merit.

The esthetic tendencies of Positivism in these respects will be sufficiently evident from the remarks in the foregoing chapter on the Worship of Woman, and from the explanation to be given in the next chapter of the Worship of Humanity. From these, indeed, most Positivist festivals, private or public, will originate. But it will not be necessary, within the limits of this preliminary review, to enlarge further upon this branch of the subject.

While the social value of Art is thus enhanced by the importance of the work assigned to it, new and extensive fields for its operation are opened out by Positivism. Chief amongst these is History, regarded as a continuous whole; a domain at present almost untouched.

Idealisation of historical types.

Modern poets, finding little to inspire them in their own times, and driven back into ancient life by the classical system, have already idealised some of the past phases of Humanity. Our great Corneille, for instance, is principally remembered for

the series of dramas in which he has so admirably depicted various periods of Roman history. In our own times, the historical spirit having become stronger, Scott and Manzoni have made similar though less perfect attempts to idealise later periods. Such examples, however, are but spontaneous and imperfect indications of the new career which Positivism now offers to esthetic genius; its scope ranging over the whole region of the Past and even of the Future. Until this vast domain had been conceived of as a whole by the philosopher, it would have been impossible to bring it within the compass of poetry. Now theological and metaphysical philosophers were prevented by the absolute spirit of their doctrines from understanding history in all its phases, and were totally incapable of idealising them as they deserved. Positivism, on the contrary, is always relative; and its principal feature is a theory of history which enables us to appreciate and become familiar with every mode in which human society has formed itself. No sincere Monotheist can understand and represent with fairness the life of Polytheists or Fetichists. But the Positivist poet, accustomed to look upon all past historical stages in their proper filiation, will be able so thoroughly to identify himself with all as to awaken our sympathies for them, and revive the traces which each individual may recognise of corresponding phases in his own history. Thus we shall be able thoroughly to enter into the esthetic beauty of the Pagan creeds of Greece and Rome, without any of the scruples which Christians could not but feel when engaged on the same subject. In the Art of the Future all phases of the Past will be recalled to life with the same distinctness with which some of them have been already idealised by such men as Homer and Corneille. And the value of this new source of inspiration is the greater that, at the same time that it is being opened out to the artist, the public is being prepared for its enjoyment. An almost exhaustless series of beautiful creations in epic or dramatic art may be produced, which by rendering it more easy to comprehend and to glorify the Past in all its phases, will form an essential element on the one hand of our educational system, and on the other of the worship of Humanity.

Art requires the highest education; but little special instruction.

Lastly, not only will the field for Art become wider, but its organs will be men of a higher stamp. The present faulty system of esthetic specialities will cease; alien as it is to that

synthetic spirit which always characterises the highest poetic genius.

Real talent for Art cannot fail to be called out by the educational system of Positivism, which, though intended for the working classes, is equally applicable to all others. We can only idealise and portray what has become familiar to us; consequently poetry has always rested upon some system of belief, capable of giving a fixed direction to our thoughts and feelings. The greatest poets, from Homer to Corneille, have always participated largely in the best education of which their times admitted. The artist must have clear conceptions before he can exhibit true pictures. Even in these anarchic times, when the system of specialities is being carried to such an irrational extent, the so-called poets who imagine that they can save themselves the trouble of philosophical training have in reality to borrow a basis of belief from some worn-out metaphysical or theological creed. Their special education, if it can be called so, consists merely in cultivating the talent for expression, and is equally injurious to their intellect and their heart. Incompatible with deep conviction of any kind, while giving mechanical skill in the technical department of Art, it impairs the far more important faculty of idealisation. Hence it is that we are at present so deplorably over-stocked with verse-makers and literary men, who are wholly devoid of real poetic feeling, and are fit for nothing but to disturb society by their reckless ambition. As for the four special arts, the training for them at present given, being still more technical, is even more hurtful in every respect to the student whose education does not extend beyond it. On every ground then artists of whatever kind should begin their career with the same education as the rest of society. The necessity for such an education in the case of women has been already recognised; and it is certainly not less desirable for artists and poets.

Indeed, so esthetic is the spirit of Positive education, that no special training for Art will be needed, except that which is given spontaneously by practice. There is no other profession which requires so little direct instruction; the tendency of it in Art being to destroy originality, and to stifle the fire of genius with technical erudition. Even for the special arts no professional education is needed. These, like industrial arts, should be acquired by careful apprenticeship under good masters.

The notorious failure of public institutions established for the purpose of forming musicians and painters, makes it unnecessary to dwell further upon this point. Not to speak of their injurious effects upon character, they are a positive impediment to true genius. Poets and artists then require no education beyond that which is given to the public, whose thoughts and emotions it is their office to represent. Its freedom from speciality makes it all the more fit to develop and bring forward real talent. It will strengthen the love of all the fine arts simultaneously; for the connection between them is so intimate that those who make it a boast that their talent is for one of them exclusively will be strongly suspected of having no real vocation for any. The greatest masters even in modern times have all shown this universality of taste. Its absence in the present day is but a fresh proof that esthetic genius does not and cannot exist in times like these, when Art has no social purpose and rests on no philosophic principles. If even amateurs are expected to enjoy Art in all its forms, is it likely that composers of real genius will restrict their admiration to their own special mode of idealisation and expression?

Positivism then, while infusing a profoundly esthetic spirit into general education, would suppress all special schools of Art on the ground that they impede its true growth, and simply promote the success of mediocrities. When this principle is carried out to its full length, we shall no longer have any special classes devoting the whole of their lives to artistic pursuits. The culture of Art, especially of poetry, will be a spontaneous addition to the functions of the three classes which constitute the moral power of society.

Artists as a class will disappear. Their function will be appropriated by the three classes composing the spiritual power.

Under the theocratic system which inaugurated the evolution of human society, the speculative class absorbed all functions except those relating to the common business of life. No distinction was made between esthetic and scientific talent. Their separation took place afterwards; and though it was indispensable to the full development of both, yet it forms no part of the permanent order of society, in which the only well-marked division is that between Theory and Practice. Ultimately all theoretic faculties will be again combined even more closely than in primitive times. So long as they are dispersed, their full influence on practical life cannot be realised. Only it was necessary that they should remain dispersed until

each constituent element had attained a sufficient degree of development. For this preliminary growth the long period of time that has elapsed since the decline of theocracy was necessary. Art detached itself from the common stem before Science, because its progress was more rapid, and from its nature it was more independent. The priesthood had lost its hold of Art, as far back as the time of Homer: but it still continued to be the depositary of science, until it was superseded at first by philosophers strictly so called, afterwards by mathematicians and astronomers. So it was that Art first, and subsequently Science, yielded to the specialising system which, though normal for Industry, is in their case abnormal. It stimulated the growth of our speculative faculties at the time of their escape from the yoke of theocracy; but now that the need for it no longer exists, it is the principal obstacle to the final order towards which all their partial developments have been tending. To recombine these special elements on new principles is at present the primary condition of social regeneration.

Philosophic poetry.

Looking at the two essential functions of the spiritual power, education and counsel, it is not difficult to see that what they require is a combination of poetic feeling with scientific insight. We look for a measure of both these qualities in the public; how then could they be separated in men really fit to be its spiritual guides? That they take the name of philosophers in preference to that of poets, is because their ordinary duties are more connected with Science than with Art; but they ought to be equally interested in both. Science requires systematic teaching; whereas Art is cultivated spontaneously, with the exception of the technical branches of the special arts. It must be remembered that the highest esthetic functions do not admit of permanent organs. It is only works of rare excellence which are in the highest sense useful; these, once produced, supply an unfailing source of idealisation and expression for our emotions, whether social or personal. It is enough if the interpreter of these works and his audience have been so educated as to appreciate what is perfect, and reject mediocrity. Organs of unusual power will arise occasionally, as in former times, from all sections of society, whenever the need of representing new emotions may be felt. But they will come more frequently from the philosophic class, in whose

character, when it is fully developed, Sympathy will be as prominent a feature as System.

Identity of esthetic and scientific genius.

There is, in truth, nothing organically incompatible between scientific and poetic genius. The difference lies merely in their combinations of thought, which are concrete and ideal in the one case, abstract and real in the other. Both employ analysis at starting; both alike aim ultimately at synthesis. The erroneous belief that they are irreconcileable proceeds merely from the absolute spirit of metaphysical philosophy, which so often leads us to mistake a transitory phase for the permanent order. The reason for their always appearing to have different organs is simply that the two functions cannot be called into action at the same moment. A state of society that calls for great philosophical efforts cannot be favourable to poetry, because it involves a new elaboration of first principles; and it is essential to Art that these should have been already fixed. This is the reason why in history we find periods of esthetic growth succeeding periods of great philosophical change, but never coexisting. If we look at instances of great minds who were never able to find their proper sphere, we see at once that had they risen at some other time, they might have cultivated either poetry or philosophy, as the case might be, with equal success. Diderot would no doubt have been a great poet in a time more favourable to art; and Göthe, under different social influences, might have been an eminent philosopher. All scientific discoverers in whom the inductive faculty has been more active than the deductive, have given manifest proof of poetic capacity. Whether the powers of invention take an abstract or a concrete direction, whether they are employed in discovering truth or in idealising it, the cerebral function is always essentially the same. The difference is merely that of the objects pursued; and these in the most marked examples cannot be simultaneous. The remarkably synthetic character of Buffon's genius may be looked on historically as a spontaneous instance of fusion of the scientific and esthetic spirit. Bossuet would have been even a more striking illustration of equal capacity for the deepest philosophy or for the sublimest poetry, had the circumstances of his life given him a more definite impulse in either direction.

It is, then, not unreasonable to expect, notwithstanding the opinion usually maintained, that the philosophical class will

furnish poets of the highest rank when the time calls for them. To pass from scientific thought to esthetic thought will not be difficult for minds of the highest order; for in such minds there is always a natural inclination towards the work which is most urgently required by their time. To meet the technical conditions of the arts of sound and form, it will be necessary to provide a few special masters, who, in consideration of the importance of their services to general education, will be looked upon as accessory members of the new spiritual power. But even here the tendency to specialities will be materially restricted. This exceptional position will only be given to men of sufficient esthetic power to appreciate all the fine arts; and they should be capable of practising at least the three arts of form simultaneously, as was done by Italian painters in the sixteenth century.

As an ordinary rule, it is only by their appreciation and power of explaining ideal Art in all its forms that our philosophers will exhibit their esthetic faculty. They will not be actively engaged in esthetic functions, except in the arrangement of public festivals. But when the circumstances of the time are such as to call for great epic or dramatic works, the purely philosophic function ceasing for a time to absorb the highest minds, such minds will become poets in the common sense of the word. As the work of Co-ordination and that of Idealisation will for the future alternate with greater rapidity, we might conceive them, were man's life longer, performed by the same organ. But the shortness of life, and the necessity of youthful vigour for all great undertakings, exclude this hypothesis. I only mention it to illustrate the radical identity of two forms of mental activity which are often supposed incompatible.

Women's poetry.

An additional proof of the esthetic capacity of the moderating power in works of less difficulty, but admitting of greater frequency, will be furnishsd by its feminine element. In the special arts, or at least in the arts of form, but little can be expected of them, because these demand more technical knowledge than they can well acquire, and, moreover, the slow process of training would spoil the spontaneousness which is so admirable in them. But for all poetic composition which does not require intense or prolonged effort, women of genius are better qualified than men. This they should consider as their

proper department intellectually, since their nature is not well adapted for the discovery of scientific truth. When women have become more systematically associated with the general movement of society under the influence of the new system of education, they will do much to elevate that class of poetry which relates to personal feelings and to domestic life. Women are already better judges of such poetry than men; and there is no reason why they should not excel them in composing it. For the power of appreciating and that of producing are in reality identical; the difference is in degree only, and this depends greatly upon culture. The only kind of composition which seems to me to be beyond their powers is epic or dramatic poetry in which public life is depicted. But in all its other branches, poetry would seem their natural field of study; and one which, regarded always as an exceptional occupation, is quite in keeping with the social duties assigned to them. The affections of our home life cannot be better portrayed than by those in whom they are found in their purest form, and who, without training, combine talent and expression with the tendency to idealise. Under a more perfect organisation, then, of the esthetic world than prevails at present, the larger portion of poetical and perhaps also of musical productions, will pass into the hands of the more loving sex. The advantage of this will be that the poetry of private life will then rise to that high standard of moral purity of which it so peculiarly admits, but which our coarser sex can never attain without struggles which injure its spontaneity. The simple grace of Lafontaine and the delicate sweetness of Petrarch will then be found united with deeper and purer sympathies, so as to raise lyrical poetry to a degree of perfection that has never yet been attained.

People's poetry.

The popular element of the spiritual power has not so well marked an aptitude for art, since the active nature of their occupations hardly admits of the same degree of intellectual life. But there is a minor class of poems, where energy of character and freedom from worldly cares are the chief sources of inspiration, for which working men are better adapted than women, and far more so than philosophers. When Positivist education has extended sufficiently to the People of the West, poets and musicians will spontaneously arise, as in many cases they have already arisen, to give expression to its own special aspirations. But independently of what may be due to individual efforts, the

People as a whole has an indirect but most important influence upon the progress of Art, from the fact of being the principal source of language.

Such, then, is the position which Art will finally assume in the Positive system. There will be no class, as at present, exclusively devoted to it, with the exception of a few special masters. But there will be a general education, enabling every class to appreciate all the modes of idealisation, and encouraging their culture among the three elements which constitute the moral force of society and which are excluded from political government. Among these there will be a division of esthetic labour. Poetry descriptive of public life will emanate from the philosophic class. The poetry of personal or domestic life will be written by women or working men, according as affection or energy may be the source of inspiration. Thus the mental exercise for which our faculties are best qualified will be fully developed with those classes in which the various aspects of our nature are most perfectly developed. The only classes who cannot participate in this pleasant task are those whose life is occupied by considerations of power or wealth, and whose enjoyment of Art, though heightened by the education which they in common with others will receive, must remain essentially passive. Our idealising powers will henceforth be directly concentrated on a work of the highest social importance, the purification of our moral nature. The speciality by which so much of the natural charm of Art was lost will cease, and the moral dangers inseparable from a life exclusively devoted to the faculty of expression will exist no longer.

Value of Art in the present crisis.

I have now shown the position which Art will occupy in the social system as finally constituted. I have yet to speak of its influence in the actual work of regeneration which Positivism is inaugurating. We have already seen that each of the three elements of the renovating movement assumes functions similar to those for which it is ultimately destined, performing them in a more strenuous, though less methodic way. This is obviously true of the philosophic class who head the movement; nor is it less true of the proletariate from whom it derives its vigour, nor of women whose support gives it a moral sanction. It would seem therefore that the same should hold good of the esthetic function which gives completeness to their work. On closer examination we shall find that this is the case.

1. Construction of normal types on the basis furnished by Philosophy.

The principal function of Art is to construct types on the basis furnished by Science. Now this is precisely what is required for inaugurating the new social system. However perfectly its first principles may be elaborated by thinkers, they will still be not sufficiently definite for the practical result. Systematic study of the Past can only reveal the Future in general outline. Even in the simpler sciences perfect distinctness is impossible without overstepping the limits of actual proof. Still more, therefore, in Sociology will the conclusions of Science fall always far short of that degree of fulness, precision, and clearness, without which no principle can be thoroughly popularised. But at the point where Philosophy must always leave a void, Poetry steps in and stimulates practical action. In the early periods of Polytheism, Poetry repaired the defects of the system viewed dogmatically. Its value will be even greater in idealising a system founded, not upon imagination, but upon observation of fact. In the next chapter I shall dwell at greater length on the service which Poetry will render in representing the central conception of Positivism. It will be easy to apply the same principle to other cases.

2. Pictures of the Future of Man.

In his efforts to accomplish this object, the Positivist poet will naturally be led to form prophetic pictures of the regeneration of Man, viewed in every aspect that admits of being ideally represented. And this is the second service which Art will render to the cause of social renovation; or rather it is an extension of the first. It involves in fact the systematic construction of Utopias; maintaining, as in every other branch of art, constant subordination of the ideal to the real. The unlimited licence which is apparently given to Utopias by the unsettled character of the time is in reality a bar to their practical influence, since even the wildest dreamers shrink from extravagance that oversteps the ordinary conditions of mental sanity. But when it is once understood that the sphere of Imagination is simply that of explaining and giving life to the conclusions of Reason, the severest thinkers will welcome its influence; because, so far from obscuring reality, it will give greater distinctness to it than could be given by Science unassisted. Utopias have then their legitimate purpose, and Positivism will strongly encourage their formation. They form a class of poetry which, under sound sociological principles, will prove of

material service in leading the people of the West towards the normal state. Each of the five modes of Art may participate in this salutary influence; each in its own way may give a foretaste of the beauty and greatness of the new life that is now offered to the individual, to the family, and to society.

3. Contrasts with the Past.

From this second mode in which Art assists the great work of reconstruction we pass naturally to a third, which at the present time is of equal importance; the removal of the spell under which the Western nations are still blinded to the Future by the decayed ruins of the Past. All that is necessary is to contrast them with the prophetic pictures of which we have been speaking. Since the decline of Catholicism in the fourteenth century, Art has flourished, notwithstanding its application to critical purposes alien to its true nature, which is essentially synthetic. Therefore during its future constructive phase, it will not be incompatible with the secondary object of contending against opinions, and still more against modes of life, which ought to have died out with the Catholic system, or with the revolutionary period which followed it. Yet resistance to some of the most deeply-rooted errors of the Past will not interfere with the larger purpose of Positivist Art; for direct criticism will never be needed. Whether against theological or against metaphysical dogmas, argument is henceforth needless, even in a philosophical treatise, much more so in poetry. All that is needed is simple contrast, usually implied rather than expressed, of the procedure of Positivism and Catholicism in reference to similar social and moral problems. The scientific basis of such a contrast is already furnished; it is for Art to do the rest, since the appeal should be to Feeling rather than to Reason. At the close of the last chapter I mentioned the principal case in which this comparison would have been of service, the introduction, namely, of Positivism to the two Southern nations. It was the task that I had marked out for my saintly fellow-worker, for it is one in which the esthetic powers of women would be peculiarly available.

In this the third of its temporary functions, Positivist Art approximates to its normal character. We have spoken of its idealisation of the Future, but here it will idealise the Past also. Positivism cannot be accepted until it has rendered the fullest and most scrupulous justice to Catholicism. Our poets, so far

from detracting from the moral and political worth of the mediæval system, will begin by doing all the honour to it that is consistent with philosophical truth, as a prelude to the still higher beauty of the system which supersedes it. It will be the inauguration of their permanent office of restoring the Past to life. For it is equally in the interest of systematic thought and of social sympathy that the relation of the Past to the Future should be deeply impressed upon all.

But these three steps towards the incorporation of Art into the final order, though not far distant, cannot be taken immediately. They presuppose a degree of intellectual preparation which is not yet reached either by the Western public or by its esthetic teachers. The present generation under which, in France, the great revolution is now peacefully entering upon its second phase, may diffuse Positivism largely, not merely amongst qualified thinkers, but among the people of Paris, who are entrusted with the destinies of Western Europe, and among women of nobler nature. The next generation, growing up in the midst of this movement, may, before the expiration of a century from the date of the Convention, complete spontaneously the moral and mental inauguration of the new system, by exhibiting the new esthetic features which Humanity in her regenerate condition will assume.

Summary of the chapter.

Let us now sum up the conclusions of this chapter. We have found Positive Philosophy peculiarly favourable to the continuous development of all the fine arts. A doctrine which encourages Humanity to strive for perfection of every kind, cannot but foster and assimilate that form of mental activity by which our sense of perfection is so highly stimulated. It controls the Ideal, indeed, by systematic study of the Real; but only in order to furnish it with an objective basis, and so to secure its coherence and its moral value. Placed on this footing, our esthetic faculties are better adapted than the scientific, both to the nature and range of our understanding, and also to that which is the object of all intellectual effort, the organisation of human unity; for they are more immediately connected with Feeling, on which the unity of our nature must rest. Next to direct culture of the heart, it is in ideal Art that we shall find the best assistance in our efforts to become more loving and more noble.

Logically, Art should have a salutary influence upon our

intellectual faculties, because it familiarises us from childhood with the features by which all constructive efforts of man should be characterised. Science has for a long time preferred the analytic method; whereas Art, even in these times of anarchy, always aims at Synthesis, which is the final goal of all intellectual activity. Even when Art, contrary to its nature, undertakes to destroy, it cannot do its work, whatever it be, without constructing. Thus, by implanting a taste and faculty for ideal construction, Art enables us to build with greater effect than ever upon the more stubborn soil of reality.

On all these grounds Art, in the Positive system, is made the primary basis of general education. In a subsequent stage education assumes a more scientific character, with the object of supplying a systematic conception of the external world. But in after life Art resumes its original position. There the ordinary functions of the spiritual power will be esthetic rather than scientific. The three elements of which the modifying power is composed will become spontaneously the organs of idealisation, a function which will henceforth never be dissociated from the power of philosophic synthesis.

Such a combination implies that the new philosophers shall have a true feeling for all the fine arts. In ordinary times passive appreciation of them will suffice; but there will occasionally be periods where philosophic effort ceases to be necessary, and which call rather for the vigour of the poet; and at these times the more powerful minds among them should be capable of rising to the loftiest creative efforts. Difficult as the condition may be, it is essential to the full degree of moral influence of which their office admits and which their work requires. The priest of Humanity will not have attained his full measure of superiority over the priest of God, until with the intellect of the Philosopher he combines the enthusiasm of the Poet, as well as the tenderness of Woman, and the People's energy.

CHAPTER VI.

CONCLUSION. THE RELIGION OF HUMANITY.

Recapitulation of the results obtained.

Love, then, is our principle; Order our basis; and Progress our end. Such, as the preceding chapters have shown, is the essential character of the system of life which Positivism offers for the definite acceptance of society; a system which regulates the whole course of our private and public existence, by bringing Feeling, Reason, and Activity into permanent harmony. In this final synthesis, all essential conditions are far more perfectly fulfilled than in any other. Each special element of our nature is more fully developed, and at the same time the general working of the whole is more coherent. Greater distinctness is given to the truth that the affective element predominates in our nature. Life in all its actions and thoughts is brought under the control and inspiring charm of Social Sympathy.

Harmony of three sides of human nature.

By the supremacy of the Heart, the Intellect, so far from being crushed, is elevated; for all its powers are consecrated to the service of the social instincts, with the purpose of strengthening and of directing their influence. By accepting its subordination to Feeling, Reason adds to its own authority. To it we look for the revelation of the fundamental order which guides our life in obedience to the natural laws of the phenomena around us. The objective basis thus discovered for human effort reacts most beneficially on our moral nature. Its forced acceptance controls the fickleness to which our affections are liable, and acts as a direct stimulus to social sympathy. Concentrated on so high an office, and thus preserved from useless digression, the intellect will yet find a boundless field for its operations in the study of all the natural laws by which human destinies are affected, and especially of those which relate to the constitution of man or of society. The preponderance

of the sociological point of view, so far from discouraging even the most abstract order of speculations, adds to their logical coherence as well as to their moral value; since it gives the only central point round which they can be co-ordinated.

And whilst Reason is admitted to its due share of influence on human life, Imagination is also strengthened and called into constant exercise; assuming henceforth its proper function, the idealisation of truth. For the external basis of our conceptions scientific investigation is necessary. But this basis once obtained, the constitution of our mind is far better adapted to esthetic than to scientific study, provided always that Imagination recognise the controlling influence of Science so well calculated to restrain its extravagance. Subject to this condition, Positivism gives every encouragement to esthetic studies, as being in such perfect accordance with its guiding principle of affection, and so closely related to its practical object, Progress. Art will enter largely into the social life of the Future, and will be regarded as the most pleasurable and most salutary exercise of our intellectual powers, because it leads them in the most direct manner to the culture and improvement of our moral nature.

Practical object of human life.

Originating in the first instance with practical life, Positivism will return thither with increased force, now that its long period of scientific preparation is accomplished, and that it has occupied the field of moral truth, henceforth its principal domain. Its principle of sympathy, so far from relaxing our efforts, will stimulate all our faculties to universal activity by urging them onwards towards perfection of every kind. Scientific study of the natural Order is inculcated solely with the view of directing all the forces of Man and of Society to its improvement by artificial effort. Hitherto this aim has hardly been recognised, even with regard to the material world; and but a small proportion of human energy has been spent upon it. Yet the aim is high, provided always that the view taken of human progress extend beyond its lower and more material stages. Our theoretical powers once concentrated on the moral problems which form their principal field, our practical energies will not fail to take the same direction, devoting themselves to that portion of the natural Order which is most imperfect and at the same time most modifiable. With these larger and more systematic views of human life, its best efforts will be given to the improvement of the mind, and still more to

the improvement of the character and to the increase of affection and courage. Public and private life are now brought into close relation by the identity of their principal aims, which being kept constantly in sight ennoble every action in both. Practical questions must ever continue to preponderate, as before, over questions of theory; but this condition, so far from being adverse to speculative power, concentrates it upon the most difficult of all problems, the discovery of moral and social laws, our knowledge of which will never be fully adequate to our practical requirements. Mental and practical activity of this kind can never result in hardness of feeling. On the contrary, it impresses us more strongly with the conviction that Sympathy is not merely our highest happiness, but the most effectual instrument of progress; and that without it all other means can be of little avail.

Thus it is that in the Positive system, the Heart, the Intellect, and the Character mutually strengthen and develop one another; because each is systematically directed to the mode of action for which it is by nature adapted. Public and private life are brought into a far more harmonious relation than in any former time, because the purpose to which both are consecrated is identical, the difference being merely in the range of their respective instruments. The aim in both is to secure to the utmost possible extent, the victory of Social feeling over Self-love; and to this aim all our powers, whether of affection, thought, or action, are in both unceasingly directed.

This, then, is the shape in which the great human problem comes definitely before us. Its solution demands all the appliances of Social Art. The primary principle on which the solution rests, is the separation of the two elementary powers of society; the moral power of counsel, and the political power of command. The necessary preponderance of the latter, which rests upon material force, corresponds to the fact that in our imperfect nature, where the coarser wants are the most pressing and the most continuously felt, the selfish instincts are naturally stronger than the unselfish. Without this compulsory pressure, even our individual action would be feeble and purposeless, and social life still more certainly would lose its character and its energy. Moral force, therefore, resting on conviction and persuasion, should remain simply a modifying influence, never assuming imperative authority.

The Spiritual Power.

Originating in Feeling and in Reason, it represents the social side of our nature, and to this its direct influence is limited. Indeed by the very fact that it is the expression of our highest attributes, it is precluded from that practical ascendancy which is possessed by faculties of a lower but more energetic kind. Inferior to material force in power, though superior to it in dignity, it contrasts and opposes its own classification of men according to the standard of moral and intellectual worth, to the classification by wealth and worldly position which actually prevails. True, the higher standard will never be adopted practically, but the effort to uphold it will react beneficially on the natural order of society. It will restore the breadth of view and the sense of duty, which are so apt to be impaired by the ordinary course of daily life.

Priests.

The means of effecting this important result, the need of which is so generally felt, will not be wanting, when the moderating power enters upon its characteristic function of preparing us for practical life by a rational system of education, throughout which, even in its intellectual department, moral considerations will predominate. This power will therefore concentrate itself upon theoretical and moral questions; and it can only maintain its position as the recognised organ of social sympathy, by invariable abstinence from political action. It will be its first duty to contend against the ambitious instincts of its own members. True, such instincts, in spite of the impurity of their source, may be of use in those natures who are really destined for the indispensable business of government. But for a spiritual power formal renunciation of wealth and rank is at the very root of its influence; it is the first of the conditions which justify it in resisting the encroachments to which political power is always tempted. Hence the classes to whose natural sympathies it looks for support are those who, like itself, are excluded from political administration.

Women.

Women, from their strongly sympathetic nature, were the original source of all moral influence; and they are peculiarly qualified by the passive character of their life to assist the action of the spiritual power in the family. With its most essential function of education they are intimately connected. Private education is entrusted to their sole charge; and public education simply consists in giving a more systematic shape to what the mother has already inculcated in childhood. As wives they

assume still more distinctly the spiritual function of counsel; softening by persuasion where the philosopher can only influence by conviction. In social meetings, again, the only mode of public life adapted to their nature, they assist the spiritual power in the formation of Public Opinion of which it is the systematic organ, by applying the principles which it inculcates to the case of particular actions or persons. In all these matters their influence will be far more effectual when men have done their duty to women by setting them free from the pressure of material necessity; and when women on their side have renounced both power and wealth; as we see so often exemplified among the working classes.

The People.

The affinity of the People with the philosophic power is less direct and less pure; but it will be an active agent in removing the obstacles which the temporal power will inevitably oppose. The working classes having but little spare time and small individual influence, cannot, except on rare occasions, participate in the practical administration of government, since all efficient government involves concentration of power. Moral force, on the contrary, created as it is by free convergence of opinion, admits of, and indeed requires, the widest ramification. Working men, owing to their freedom from practical responsibilities and their unconcern for personal aggrandisement, are better disposed than their employers to broad views and to generous sympathies; and will therefore naturally associate themselves with the spiritual power. It is they who will supply the principal basis of true public opinion, so soon as they are enabled by Positive education, which is specially framed with a view to their case, to give greater definiteness to their aspirations. Their wants and their sympathies will alike bring them into contact with the philosophic priesthood as the systematic guardian of their interests against the governing classes. In return for such protection they will bring the whole weight of their influence to assist the priesthood in its great social mission, the subordination of government to morality. In those exceptional cases where it becomes necessary for the moderating power to assume political functions, the popular element will of itself suffice for the emergency, thus exempting the philosophic element from participating in an anomaly from which its character would suffer almost as seriously as the feminine element.

The direct influence of Reason over our imperfect nature is so feeble that the new priesthood could not of itself ensure such respect for its theories as would bring them to any practical result. But the sympathies of women and of the people, operating in every town and in every family, will be sufficient to ensure its efficacy in organising that legitimate degree of moral pressure which the poor may bring to bear upon the rich. Moreover it will be one of the results of our common system of education that additional aid will spring from the governing classes themselves; for some of their noblest members will volunteer their assistance to the spiritual power, forming a sort of new chivalry. And yet, comprehensive as our organisation of moral force will be, so great is the innate strength of the selfish instincts, that our success in solving the great human problem will always fall short of what we might legitimately desire. To this conclusion we must come, in whatever way we regard the destiny of Man; but it should only encourage us to combine our efforts still more strongly in order to ameliorate the order of Nature in its most important aspects; those which are at once the most modifiable and the most imperfect.

Gradual perception of the great problem of life.

The highest progress of man and of society consists in gradual increase of that mastery which man alone can attain over all his defects, especially those of his moral nature. Among the nations of antiquity the progress in this direction was but small; all that could be done was to prepare the way for it by certain necessary phases of intellectual and social development. The whole tendency of Greek and Roman society was such as made it impossible to form a distinct conception of the great problem of our moral nature; Morals being with them invariably subordinate to Politics. Nevertheless, it is moral progress which alone can satisfy our nature; and in the Middle Ages it was recognised as the highest aim of human effort, notwithstanding that its intellectual and social conditions were as yet very imperfectly realised. The creeds of the Middle Ages were too unreal and imperfect, the character of society was too military and aristocratic, to allow Morals and Politics to assume permanently their right relation. The attempt was made, however; and, inadequate as it was, it was enough to allow the people of the West to appreciate the fundamental principle involved in it, a principle destined to survive the opinions and the habits of life from which it arose. Its

full weight could never be felt until the Positive spirit had extended beyond the elementary subjects to which it had been so long subjected, to the sphere of social truth; and had thus reached the position at which a complete synthesis became possible. Equally essential was it that in those countries which had been incorporated into the Western Empire, and had passed from it into Catholic Feudalism, war should be definitely superseded by industrial activity. In the long period of transition which has elapsed since the Middle Ages, both these conditions have been fulfilled, while at the same time the old system has been gradually decomposed. Finally the great crisis of the Revolution has stimulated all advanced minds to reconsider, with better intellectual and social principles, the same problem that Christianity and Chivalry had attempted. The radical solution of it was then begun, and it is now completed and enunciated in a systematic form by Positivism.

Humanity the centre to which every aspect of Positivism converges.

All essential phases in the evolution of society answer to corresponding phases in the growth of the individual, whether it has proceeded spontaneously or under systematic guidance, supposing always that his development be complete. But independently of this close connection between all modes and degrees of human regeneration, we have to search for a central point towards which all will naturally converge. In this point consists the unity of Positivism as a system of life. Unless it can be thus condensed round one single principle, it will never wholly supersede the synthesis of Theology, notwithstanding its superiority in the reality and stability of its component parts, and in their homogeneity and coherence as a whole. The possession of this central principle, equally adapted to Feeling, Reason, and Activity, is the final condition of the ascendancy of Positivism in private or in public life.

Such a centre we find in the great conception of Humanity, towards which every aspect of Positivism naturally converges. By it the conception of God will be entirely superseded; and a synthesis be formed, more complete and permanent than that provisionally established by the old religions. Through it the new doctrine becomes at once accessible to men's hearts in its full extent and application. From their hearts it will penetrate their minds, and thus the immediate necessity of beginning with a long and difficult course of study is avoided, though this

must of course be always indispensable to its systematic teachers.

This central point of Positivism is even more moral than intellectual in character; it represents the principle of Love upon which the whole system rests. It is the peculiar characteristic of the Great Being who is here set forth, to be compounded of separable elements. Its existence depends therefore entirely upon mutual Love knitting together its various parts. The calculations of self-interest can never be substituted as a combining influence for the sympathetic instincts.

Yet the belief in Humanity while stimulating Sympathy, at the same time enlarges the scope and vigour of the Intellect. For it requires high powers of generalisation to conceive clearly of this vast organism as the result of spontaneous co-operation; abstraction made of all partial antagonisms. Reason, then, has its part in this central dogma as well as Love. It enlarges and completes our conception of the Supreme Being, by revealing to us the external and internal conditions of its existence.

Lastly, our active powers are stimulated by it no less than our feelings and our reason. For since Humanity is so far more complex than any other organism, it will react more strongly and more continuously on its environment, submitting to its influence and so modifying it. Hence results Progress, which is simply the development of Order under the influence of Love.

Thus in the conception of Humanity the three essential aspects of Positivism, its subjective principle, its objective dogma, and its practical object, are united. Towards Humanity, who is for us the only true Great Being, we, the conscious elements of whom she is composed, shall henceforth direct every aspect of our life, individual or collective. Our thoughts will be devoted to the knowledge of Humanity, our affections to her love, our actions to her service.

Positivists then may, more truly than theological believers of whatever creed, regard life as a continuous and intense act of worship; worship which will elevate and purify our feelings, enlarge and enlighten our thoughts, ennoble and invigorate our actions. It supplies a direct solution, so far as a solution is possible, of the great problem of the Middle Ages; the subordination of Politics to Morals. For this follows at once from the

consecration now given to the principle that social sympathy should preponderate over self-love.

Thus Positivism becomes, in the true sense of the word, a Religion; one more real and more complete than any other, and therefore destined to replace all imperfect and provisional systems resting on the primitive basis of theology.

Even the synthesis of the old theocracies was insufficient, because, being based on purely subjective principles, it could never embrace practical life, which must always be subordinated to the objective realities of the external world. Theocracy was thus limited at the outset to the sphere of thought and of feeling; and part even of this field was soon lost when Art became emancipated from theocratical control, showing a spontaneous tendency to its natural vocation of idealising real life. Of science and of morality the priests were still left sole arbiters; but here, too, their influence materially diminished so soon as the discovery of the simpler abstract truths of Positive science gave birth to Greek Philosophy. Philosophy, though as yet necessarily restricted to the metaphysical stage, yet already stood forward as the rival of the sacerdotal system. Its attempts to construct were in themselves fruitless; but they overthrew Polytheism, and ultimately transformed it into Monotheism. In this the last phase of theology, the intellectual authority of the priests was undermined no less deeply than the principle of their doctrine. They lost their hold upon Science, as long ago they had lost their hold upon Art. All that remained to them was the moral guidance of society; and even this was soon compromised by the progress of free thought; progress really due to the Positive spirit, although its systematic exponents still belonged to the metaphysical school.

With the discovery of sociological laws, a synthesis on the basis of Science becomes possible, science being now concentrated on the study of Humanity.

When Science had expanded sufficiently to exist apart from Philosophy, it showed a rapid tendency towards a synthesis of its own, alike incompatible with metaphysics and with theology. It was late in appearing, because it required what the other two did not, a long series of preliminary efforts; but as it approached completion, it gradually brought the Positive spirit to bear upon the organisation of practical life, from which that spirit had originally emanated. But thoroughly to effect this result was impossible until the science of Sociology had been formed; and this was done by my discovery of the law of historical development. Henceforth all true men of science will

rise to the higher dignity of philosophers, and by so doing will necessarily assume something of the sacerdotal character, because the final result to which their researches tend is the subordination of every subject of thought to the moral principle; a result which leads us at once to the acceptance of a complete and homogeneous synthesis. Thus the philosophers of the future become priests of Humanity, and their moral and intellectual influence will be far wider and more deeply rooted than that of any former priesthood. The primary condition of their spiritual authority is exclusion from political power; as a guarantee that theory and practice shall be systematically kept apart. A system in which the organs of counsel and those of command are never identical cannot possibly degenerate into any of the evils of theocracy.

By entirely renouncing wealth and worldly position, and that not as individuals merely, but as a body, the priests of Humanity will occupy a position of unparalleled dignity. For with their moral influence they will combine what since the downfall of the old theocracies has always been separated from it, the influence of superiority in art and science. Reason, Imagination, and Feeling will be brought into unison: and so united, will react strongly on the imperious conditions of practical life; bringing it into closer accordance with the laws of universal morality, from which it is so prone to deviate. And the influence of this new modifying power will be the greater that the synthesis on which it rests will have preceded and prepared the way for the social system of the future; whereas theology could not arrive at its central principle, until the time of its decline was approaching. All functions then that cooperate in the elevation of man will be regenerated by the Positive priesthood. Science, Poetry, Morality, will be devoted to the study, the praise, and the love of Humanity, in order that under their combined influence, our political action may be more unremittingly given to her service.

With such a mission, Science acquires a position of unparalleled importance, as the sole means through which we come to know the nature and conditions of this Great Being, the worship of whom should be the distinctive feature of our whole life. For this all-important knowledge, the study of Sociology would seem to suffice; but Sociology itself depends upon preliminary study, first of the outer world, in which the actions of

Humanity take place; and secondly, of Man, the individual agent.

The object of Positivist worship is not like that of theological believers, an absolute, isolated, incomprehensible Being, whose existence admits of no demonstration, or comparison with anything real. The evidence of the Being here set forward is spontaneous, and is shrouded in no mystery. Before we can praise, love, and serve Humanity as we ought, we must know something of the laws which govern her existence, an existence more complicated than any other of which we are cognisant.

Statical Aspects of Humanity.

And by virtue of this complexity, Humanity possesses the attributes of vitality in a higher degree than any other organisation; that is to say, there is at once more intimate harmony of the component elements, and more complete subordination to the external world. Immense as is the magnitude of this organism measured both in Time and Space, yet each of its phenomena carefully examined will show the general consensus of the whole. At the same time it is more dependent than any other upon the conditions of the outer world; in other words, upon the sum of the laws that regulate inferior phenomena. Like other vital organisms, it submits to mathematical, astronomical, physical, chemical, and biological conditions; and, in addition to these, is subject to special laws of Sociology with which lower organisms are not concerned. But as a further result of its higher complexity it reacts upon the world more powerfully; and is indeed in a true sense its chief. Scientifically defined, then, it is truly the Supreme Being: the Being who manifests to the fullest extent all the highest attributes of life.

But there is yet another feature peculiar to Humanity, and one of primary importance. That feature is, that the elements of which she is composed must always have an independent existence. In other organisms the parts have no existence when severed from the whole; but this, the greatest of all organisms, is made up of lives which can really be separated. There is, as we have seen, harmony of parts as well as independence; but the last of these conditions is as indispensable as the first. Humanity would cease to be superior to other beings were it possible for her elements to become inseparable. The difficulty of reconciling these two necessary conditions is a sufficient explanation of the slowness with which this highest of all organisms

has been developed. It must not, however be supposed that the new Supreme Being is, like the old, merely a subjective result of our powers of abstraction. Its existence is revealed to us, on the contrary, by close investigation of objective fact. Man indeed, as an individual, cannot properly be said to exist, except in the too abstract brain of modern metaphysicians. Existence in the true sense can only be predicated of Humanity; although the complexity of her nature prevented men from forming a systematic conception of it, until the necessary stages of scientific initiation had been passed. Bearing this conclusion in mind, we shall be able now to distinguish in Humanity two distinct orders of functions; those by which she acts upon the world, and those which bind together her component parts. Humanity cannot herself act otherwise than by her separable members; but the efficiency of these members depends upon their working in co-operation, whether instinctively or with design. We find, then, external functions relating principally to the material existence of this organism; and internal functions by which its movable elements are combined. This distinction is but an application to the collective organism of the great theory, due to Bichat's genius, of the distinction between the life of nutrition and the life of relation which we find in the individual organism. Philosophically it is the source from which we derive the great social principle of separation of spiritual from temporal power. The temporal power governs: it originates in the personal instincts, and it stimulates activity, on which depends the general order of society. The spiritual power can only moderate: it is the exponent of our social instincts, and it promotes co-operation, which results in Progress. Of these functions of Humanity the first corresponds to the function of nutrition, the second to that of innervation in the individual organism.

Dynamical aspects.

Having now viewed our subject statically, we may come to its dynamical aspect; reserving more detailed discussion for the third volume of this treatise, which deals with my fundamental theory of human development. The Great Being whom we worship is not immutable any more than it is absolute. Its nature is relative; and, as such, is eminently capable of growth. In a word it is the most vital of all living beings known to us. It extends and becomes more complex by the continuous successions of generations. But in its progressive changes no less

than in its permanent functions, it is subject to invariable laws. And the sum of these changes henceforth to be considered as a whole, forms a more sublime object of contemplation than the solemn inaction of the old Supreme Being, whose existence was passive except when interrupted by acts of arbitrary and unintelligible volition. Thus it is only by Positive science that we can appreciate this highest of all destinies by which all individual life is governed and surrounded. It is with this as with subjects of minor importance: systematic study of the Past is necessary in order to determine the Future, and so explain the tendencies of the Present. Let us then pass from the conception of Humanity as fully developed, to the history of its gradual formation; a history which sums up every aspect of human progress. In ancient times it was incompatible both with the theological spirit and also with the military character of society, which involved the slavery of the productive classes. The feeling of Patriotism, restricted as it was at first, was the only prelude that was then possible to the recognition of Humanity. From this narrow nationality there arose in the Middle Ages the feeling of universal brotherhood, as soon as military life had entered on its defensive phase, and all supernatural creeds had spontaneously merged into a monotheistic form common to the whole West. The growth of Chivalry, and the attempt made to effect a permanent separation of the two social powers, announced already the subordination of Politics to Morals; and thus showed that the conception of Humanity was in direct course of preparation. But the unreal and anti-social nature of the mediæval creed, and the military and aristocratic character of feudal society, made it impossible to go very far in this direction. The abolition of personal slavery was the most essential result of this important period. Society could now assume its industrial character; and feelings of fraternity were encouraged by modes of life in which all classes alike participated. Meanwhile the growth of the Positive spirit was proceeding, and preparing the way for the establishment of Social Science, by which alone all other Positive studies could be systematised. This being done, the conception of the Great Being became possible. It was with reference to subjects of a speculative and scientific nature that two centuries ago the conception of this immense and eternal organism first found

distinct expression.[1] Subsequently amidst the inevitable decline of the theological and military system, there arose a consciousness of the movement of society, which had now advanced through so many phases; and the notion of continuous progress as the distinctive feature of Humanity became admitted. Still the conception of Humanity as the basis for a new synthesis was impossible until the great revolutionary crisis which on the one hand proved the urgent necessity for social regeneration, and on the other gave birth to the only philosophy capable of effecting it. Thus our consciousness of the new Great Being has advanced co-extensively with its growth. Our present conception of it is as much the measure of our social progress as it is the summary of Positive knowledge.

Inorganic and organic sciences elevated by their connection with the supreme science of Humanity.

In speaking of the dignity of Science when regenerated by this lofty application of it, I do not refer solely to the special science of Social phenomena, but also to the preliminary studies of Life and of the Inorganic World, both of which form an essential portion of Positive doctrine. A social mission of high importance will be recognised in the most elementary sciences, whether it be for the sake of their method or for the value of their scientific results. True, the religion of Humanity will lead to the entire abolition of scientific Academies, because their tendency, especially in France, is equally hurtful to science and morality. They encourage mathematicians to confine their attention exclusively to the first step in the scientific scale; and biologists to pursue their studies without any solid basis or definite purpose. Special studies carried on without regard for the encyclopedic principles which determine the relative value of knowledge, and its bearing on human life, will soon be condemned by all men of right feeling and good sense. Such men will feel the necessity of resisting the morbid narrowness of mind and heart to which the anarchy of our times inevitably leads. But the abolition of the Academic system will only ensure a larger measure of respect for all scientific researches of real value, on whatever subject. The study of Mathematics, the value of which is at present negatived by its hardening tendency, will now manifest its latent moral efficacy, as the only sure basis for firm conviction; a state of mind that can never be perfectly

[1] Toute la suite des hommes, pendant le cours de tant de siècles, doit être considérée comme un même homme qui subsiste toujours et qui apprend continuellement.—Pascal, Pensées, Part I., Art. 1.

attained in more complex subjects of thought, except by those who have experienced it in the simpler subjects. When the close connection of all scientific knowledge becomes more generally admitted, Humanity will reject political teachers who are ignorant of Geometry no less than geometricians who neglect Sociology. Biology meanwhile will lose its dangerous materialism, and will receive all the respect due to its close connection with social science and its important bearing on the essential doctrines of Positivism. To attempt to explain the life of Humanity without first examining the lower forms of life, would be as serious an error as to study Biology without regard to the social purpose which Biology is intended to serve. Science recognised as indispensable to the establishment of moral truth, and at the same time fully admitting its subordination to the inspirations of the heart, will take its place henceforward among the most essential functions of the priesthood of Humanity. The supremacy of true Feeling will strengthen Reason, and will receive in turn from Reason a systematic sanction. Natural philosophy, besides its evident value in regulating the spontaneous action of Humanity, has a direct tendency to elevate human nature; it draws from the outer world that basis of fixed truth which is so necessary to control our various desires.

The study of Humanity therefore, directly or indirectly, is for the future the permanent aim of Science; and Science is now in a true sense consecrated, as the source from which the universal religion receives its principles. It reveals to us not merely the nature and conditions of the Great Being, but also its destiny and the successive phases of its growth. The aim is high and arduous; it requires continuous and combined exertion of all our faculties; but it ennobles the simplest processes of scientific investigation by connecting them permanently with subjects of the deepest interest. The scrupulous exactness and rigorous caution of the Positive method, which when applied to useless subjects seem so often puerile, will be valued and insisted on when seen to be necessary for the efficacy of efforts relating to our most essential wants. Rationalism, in the true sense of the word, so far from being incompatible with right feeling, strengthens and develops it, by placing all the facts of the case, in social questions especially, in their true light.

The new religion is even

But, however honourable the rank which Science when

more favourable to Art than to Science.

regenerated will hold in the new religion, the sanction given to Poetry will be even direct and unqualified, because the function assigned to it is one which is more practical and which touches us more nearly. Its function will be the praise of Humanity. All previous efforts of Art have been but the prelude to this, its natural mission; a prelude often impatiently performed, since Art threw off the yoke of theocracy at an earlier period than Science. Polytheism was the only religion under which it had free scope: there it could idealise all the passions of our nature, no attempt being made to conceal the similarity of the gods to the human type. The change from Polytheism to Monotheism was unacceptable to Art, because it narrowed its field; but since the close of the Middle Ages it has begun to shake off the influence of obscure and chimerical beliefs, and to take possession of its proper sphere. The field that now lies before it in the religion of Humanity is inexhaustible. It is called upon to idealise the social life of Man, which, in the time of the nations of antiquity, had not been sufficiently developed to inspire the highest order of poetry.

Poetic portraiture of the new Supreme Being.

In the first place it will be of the greatest service in enabling men to realise the conception of Humanity, subject only to the condition of not overstepping the fundamental truths of Science. Science unassisted cannot define the nature and destinies of this Great Being with sufficient clearness for a religion in which the object of worship must be conceived distinctly, in order to be ardently loved and zealously served. The scientific spirit, especially in subjects of this nature, is confined within narrow limits; it leaves inevitable deficiencies which esthetic genius must supply. And there are certain qualities in Art as opposed to Science, which specially qualify it for the representation of Humanity. For Humanity is distinguished from other forms of life by the combination of independence with co-operation, attributes which also are natural to Poetry. For while Poetry is more sympathetic than Science, its productions have far more individuality; the genius of their author is more strongly marked in them, and the debt to his predecessors and contemporaries is less apparent. Thus the synthesis on which the inauguration of the final religion depends is one in which Art will participate more than Science, the latter supplying merely the necessary basis. Its influence will be even greater than in the times of Polytheism; for powerful as Art

appeared to be in those times, it could in reality do nothing but embellish the fables to which the confused ideas of theocracy had given rise. By its aid we shall for the first time rise at last to a really human point of view, and be enabled distinctly to understand the essential attributes of the Great Being of whom we are members. The material power of Humanity, and the successive phases of her physical, her intellectual, and above all her moral progress, will each in turn be depicted. Avoiding the difficulties of analytical study, we shall gain a clear knowledge of her nature and her conditions by the poet's description of her future destiny, of her constant struggle against painful fatalities which have at last become a source of happiness and greatness, of the slow growth of her infancy, of her lofty hopes now so near fulfilment. The history of universal Love, the soul by which this Great Being is animated, is of itself an endless theme for the poetry of the future; representing the marvellous history of the advance of man, individually or socially, from brutish appetite to pure unselfish sympathy.

Contrast with former divinities.

Comparisons, too, may be instituted, in which the poet, without specially attacking the old religion, will indicate the superiority of the new. The attributes of the new Great Being may be forcibly illustrated, especially during the time of transition, by contrast with the inferiority of her various predecessors. All theological types are absolute, indefinite, and immutable; consequently in none of them has it been possible to combine to a satisfactory extent the attributes of goodness, wisdom, and power. Nor can we conceive of their combination, except in a Being whose existence is real and subject to invariable laws. The gods of Polytheism were endowed with energy and sympathy, but possessed neither dignity nor morality. They were superseded by the sublime deity of Monotheism, who was sometimes represented as inert and passionless, sometimes as impenetrable and inflexible. But the new Supreme Being, having a real existence, and therefore being relative and modifiable, admits of being more distinctly conceived than the old; and the influence of the conception will be far more elevating without controlling us less. Each one of us will recognise in it a power superior to his own, a power on which the whole destiny of his life depends, since the life of the individual is in every respect subordinate to the evolution of the race. But the knowledge of this power has not the crushing effect of the old

conception of omnipotence. For every great or good man will feel that his own life is an indispensable element in the great organism. The supremacy of Humanity is but the result of individual co-operation; her power is not supreme, it is only superior to that of all beings whom we know. Our love for her is tainted by no degrading fears, yet it is always coupled with the most sincere reverence. Perfection is in nowise claimed for her; we study her natural defects with care, in order to remedy them as far as possible. The love we bear to her is a feeling as noble as it is strong; it calls for no degrading expressions of adulation, but it inspires us with unremitting zeal for moral improvement. But these and other advantages of the new religion, though they can be indicated by the philosopher, need the poet to display them in their full light. The moral grandeur of man when freed from the chimeras that oppress him, was foreseen by Göthe, and still more clearly by Byron. But their work was one of destruction; and their types could only embody the spirit of revolt. Poetry must rise above the negative stage at which owing to the circumstances of the time their genius was arrested, and must embrace in the Positive spirit the system of sociological and other laws to which human development is subject, before it can adequately portray the new Man in his relation to the new God.

Organisation of festivals, representing statical and dynamical aspects of Humanity.

There is yet another way in which Art may serve the cause of religion; that is, in organising the festivals, whether private or public, of which to a great extent the worship of Humanity will consist. For this purpose esthetic talent is far more required than scientific; the object in view being to reveal the nature of the great Organism more clearly, by presenting all aspects of its existence, static or dynamic, in idealised forms.

These festivals then should be of two kinds, corresponding to the two essential aspects of Humanity; the first illustrating her existence, the second her action. Thus both the elements of true social feeling will be stimulated. Our static festivals celebrating social Order, will revive the sense of Solidarity; the dynamic festivals will explain social Progress, and inspire the sense of historical Continuity. Taken together, their periodic recurrence will form a continuation of Positive education; developing and confirming the principles instilled in youth. Yet there will be nothing didactic in their form; since it is of the essence of Art not to instruct otherwise than by giving

pleasure. Of course the regular recurrence of these festivals will not prevent any modifications which may be judged necessary to adapt them to special incidents that may from time to time arise.

The festivals of Order will necessarily take more abstract and austere forms than those of Progress. It will be their object to represent the statical relations by which the great Organism preserves its unity, and the various aspects of its animating principle, Love. The most universal and the most solemn of these festivals will be the feast of Humanity, which will be held throughout the West at the beginning of the new year, thus consecrating the only custom which still remains in general use to relieve the prosaic dulness of modern life. In this feast, which celebrates the most comprehensive of all unions, every branch of the human race will at some future time participate. In the same month there might be three festivals of a secondary order, representing the minor degrees of association, the Nation, the Province, and the Town. Giving this first month to the direct celebration of the social tie, we might devote the first days of the four succeeding months to the four principal domestic relations, Connubial, Parental, Filial, and Fraternal. In the sixth month, the honourable position of domestic service would receive its due measure of respect.

These would be the static festivals; taken together they would form a representation of the true theory of our individual and social nature, together with the principles of moral duty to which that theory gives rise. No direct mention is made of the personal instincts, notwithstanding their preponderance, because it is the main object of Positive worship to bring them under the control of the social instincts. Personal virtues are by no means neglected in Positive education; but to make them the objects of any special celebration, would only stimulate egotistic feeling. Indirectly their value is recognised in every part of our religious system, in the reaction which they exercise upon our generous sympathies. Their omission, therefore, implies no real deficiency in this ideal portraiture of human faculties and duties. Again, no special announcement of the subordination of Humanity to the laws of the External World is needed. The consciousness of this external power pervades every part of the Positive system; it controls our desires, directs our speculations, stimulates our actions. The simple fact of the recurrence of our

ceremonies at fixed periods, determined by the Earth's motion, is enough to remind us of our inevitable subjection to the fatalities of the External World.

As the static festivals represent Morality, so the dynamic festivals, those of Progress, will represent History. In these the worship of Humanity assumes a more concrete and animated form; as it will consist principally in rendering honour to the noblest types of each phase of human development. It is desirable, however, that each of the more important phases should be represented in itself, independently of the greatness of any individual belonging to it. Of the months unoccupied by static festivals, three might be given to the principal phases of the Past, Fetichism, Polytheism, and Monotheism; and a fourth to the celebration of the Future, the normal state to which all these phases have been tending.

Forming thus the chain of historical succession, we may consecrate each month to some one of the types who best represent the various stages. I omit, however, some explanations of detail given in the first edition of this General View, at a time when I had not made the distinction between the abstract and concrete worship sufficiently clear. A few months after its publication in 1848, the circumstances of the time induced me to frame a complete system of commemoration applicable to Western Europe, under the title of 'Positivist Calendar.' Of this I shall speak more at length in the fourth volume of the present treatise. Its success has fully justified me in anticipating this part of my subject. To it I now refer the reader, recommending him to familiarise himself with the provisional arrangement of the new Western year then put forward, and already adopted by most Positivists.

Worship of the dead. Commemoration of their service.

But the practice need not be restricted to names of European importance. It is applicable in its degree to each separate province, and even to private life. Catholicism offers two institutions in which the religion of the family connects itself with public worship in its most comprehensive sense. There is a day appointed in Catholic countries in which all are in the habit of visiting the tombs of those dear to them; finding consolation for their grief by sharing it with others. To this custom Positivists devote the last day of the year. The working classes of Paris give every year a noble proof that complete freedom of thought is in no respect incompatible with worship of the dead,

which in their case is unconnected with any system. Again there is the institution of baptismal names, which though little thought of at present, will be maintained and improved by Positivism. It is an admirable mode of impressing on men the connection of private with public life, by furnishing every one with a type for his own personal imitation. Here the superiority of the new religion is very apparent; since the choice of a name will not be limited to any time or country. In this as in other cases, the absolute spirit of Catholicism proved fatal to its prospects of becoming universal.

These brief remarks will be enough to illustrate the two classes of festivals instituted by Positivism. In every week of the year some new aspect of Order or of Progress will be held up to public veneration; and in each the link connecting public and private worship will be found in the adoration of Woman. In this esthetic side of Positive religion everything tends to strengthen its fundamental principle of Love. All the resources of Poetry, and of the special arts of sound and form, will be invoked to give full and regular expression to it. The dominant feeling is always that of deep reverence, equally free from mysticism and from affectation, proceeding from sincere acknowledgment of benefits received. While striving to surpass our ancestors, we shall yet render due honour to all their services and look with respect upon their systems of life. Influenced no longer by chimeras which though comforting to former times are now degrading, we have now no obstacle to becoming as far as possible incorporate with the Great Being whom we worship. By commemoration of past services we strengthen the desire inherent in all of us to prolong our existence in the only way which is really in our power. The fact that all human affairs are subject to one fundamental law, as soon as it becomes familiarly known, enables and encourages each one of us to live in a true sense in the Past and even in the Future; as those cannot do who attribute the events of life to the agency of an arbitrary and impenetrable Will. The praise given to our predecessors will stimulate a noble rivalry; inspiring all with the desire to become themselves incorporate into this mighty Being whose life endures through all time, and who is formed of the dead far more than the living. When the system of commemoration is fully developed, no worthy co-operator will be excluded, however humble his sphere; whether limited to his family or town, or extending

to his country or to the whole West. The education of Positivists will soon convince them that such recompense for honourable conduct is ample compensation for the imaginary hopes which inspired their predecessors.

To live in others is, in the truest sense of the word, life. Indeed the best part of our own life is passed thus. As yet this truth has not been grasped firmly, because the social point of view has never yet been brought systematically before us. But the religion of Humanity, by giving an esthetic form to the Positivist synthesis, will make it intelligible to minds of every class: and will enable us to enjoy the untold charm springing from the sympathies of union and of continuity when allowed free play. To prolong our life indefinitely in the Past and Future, so as to make it more perfect in the Present, is abundant compensation for the illusions of our youth which have now passed away for ever. Science which deprived us of these imaginary comforts, itself in its maturity supplies the solid basis for consolation of a kind unknown before; the hope of becoming incorporate into the Great Being whose static and dynamic laws it has revealed. On this firm foundation Poetry raises the structure of public and private worship; and thus all are made active partakers of this universal life, which minds still fettered by theology cannot understand. Thus Imagination, while accepting the guidance of Reason, will exercise a far more efficient and extensive influence than in the days of Polytheism. For the priests of Humanity the sole purpose of Science is to prepare the field for Art, whether esthetic or industrial. This object once attained, poetic study or composition will form the chief occupation of our speculative faculties. The poet is now called to his true mission, which is to give beauty and grandeur to human life, by inspiring a deeper sense of our relation to Humanity. Poetry will form the basis of the ceremonies in which the new priesthood will solemnise more efficiently than the old, the most important events of private life: especially Birth, Marriage, and Death; so as to impress the family as well as the state with the sense of this relation. Forced as we are henceforth to concentrate all our hopes and efforts upon the real life around us, we shall feel more strongly then ever that all the powers of Imagination, as well as those of Reason, Feeling, and Activity, are required in its service.

All the arts may co-operate in the service of religion.

Poetry once raised to its proper place, the arts of sound and form, which render in a more vivid way the subjects which Poetry has suggested, will soon follow. Their sphere, like that of Poetry, will be the celebration of Humanity; an exhaustless field, leaving no cause to regret the worn-out chimeras which, in the present empirical condition of these arts, are still considered indispensable. Music in modern times has been limited almost entirely to the expression of individual emotions. Its full power has never been felt in public life, except in the solitary instance of the *Marseillaise*, in which the whole spirit of our great Revolution stands recorded. But in the worship of Humanity, based as it is on Positive education and animated by the spirit of poetry, Music, as the most social of the special arts, will aid in the representation of the attributes and destinies of Humanity, and in the glorification of great historical types. Painting and Sculpture will have the same object; they will enable us to realise the conception of Humanity with greater clearness and precision than would be possible for Poetry, even with the aid of Music. The beautiful attempts of the artists of the sixteenth century, men who had very little theological belief, to embody the Christian ideal of Woman, may be regarded as an unconscious prelude to the representation of Humanity in the form which of all others is most suitable. Under the impulse of these feelings, the sculptor will overcome the technical difficulties of representing figures in groups, and will adopt such subjects by preference. Hitherto this has only been effected in bas-reliefs, works which stand midway between painting and sculpture. A few splendid exceptions afford a glimpse of the scope and grandeur of the latter art when raised to its true position. Statuesque groups, whether the figures are joined or, as is preferable, separate, will enable the sculptor to undertake many grand subjects from which he has been hitherto debarred.

In Architecture the influence of Positivism will be felt less rapidly; but ultimately this art like the rest will be made available for the new religion. The buildings erected for the service of God may for a time suffice for the worship of Humanity, in the same way that Christian worship was carried on at first in Pagan temples as they were gradually vacated. But ultimately buildings will be required more specially adapted to a religion in which all the functions connected with

education and worship are so completely remodelled. What these buildings will be it would be useless at present to enquire. It is less easy to foresee the Positivist ideal in Architecture than in other arts. And it must remain uncertain until the new principles of education have been generally spread, and until the Positive religion, having received all the aid that Poetry, Music, and the arts of Form can give, has become the accepted faith of Western Europe. When the more advanced nations are heartily engaged in the cause, the true temples of Humanity will soon arise. By that time mental and moral regeneration will have advanced far enough to commence the reconstruction of all political institutions. Until then the new religion will avail itself of Christian churches as these gradually become vacant.

Positivism is the successor of Christianity, and surpasses it.

Art then, as well as Science, partakes in the regenerating influence which Positivism derives from its synthetic principle of Love. Both are called to their proper functions, the one to contemplate, the other to glorify Humanity, in order that we may love and serve her more perfectly. Yet while the intellect is thus made the servant of the heart, far from being weakened by this subordinate position, it finds in it an exhaustless field, and full recognition of its value. Each of its faculties is called directly into play, and is supplied with its appropriate employment. Poetry institutes the forms of the worship of Humanity; Science supplies the principles on which those forms are framed, by connecting them with the laws of the external world. Imagination, while ceasing to usurp the place of Reason, yet enhances rather than diminishes its original influence, which the new philosophy shows to be as beneficial as it is natural. And thus human life at last attains that state of perfect harmony which has been so long sought for in vain, and which consists in the direction of all our faculties to one common purpose under the supremacy of Affection. At the same time all former efforts of Imagination and Reason, even when they clashed with each other, are fully appreciated; because we see that they developed our powers, that they taught us the conditions of their equilibrium, and made it manifest that nothing but that equilibrium was wanting to allow them to work together for our welfare. Above all do we recognise the immense value of the mediæval attempt to form a complete synthesis; although, notwithstanding all the results of Greek and Roman civilisation,

the time was not yet ripe for it. To renew that attempt upon a sounder basis, and with surer prospects of success, is the object of those who found the religion of Humanity. Widely different as are their circumstances and the means they employ, they desire to regard themselves as the successors of the great men who conducted the progressive movement of Catholicism. For those alone are worthy to be called successors, who continue or carry into effect the undertakings which former times have left unfinished; the title is utterly unmerited by blind followers of obsolete dogmas, which have long ceased to bear any relation to their original purpose, and which their own authors if now living would disavow.

But while bearing in mind our debt to Catholicism, we need not omit to recognise how largely Positivism gains by comparison with it. Full justice will be done to the aims of Catholicism, and to the excellence of its results. But the whole effect of Positivist worship will be to make men feel clearly how far superior in every respect is the synthesis founded on the Love of Humanity to that founded on the Love of God.

Christianity satisfied no part of our nature fully, except the affections. It rejected Imagination, it shrank from Reason; and therefore its power was always contested, and could not last. Even in its own sphere of affection, its principles never lent themselves to that social direction which the Catholic priesthood, with such remarkable persistency, endeavoured to give to them. The aim which it set before men, being unreal and personal, was ill-suited to a life of reality and of social sympathy. It is true that the universality of this supreme affection was indirectly a bond of union; but only when it was not at variance with true social feeling. And from the nature of the system, opposition between these two principles was the rule, and harmony the exception; since the Love of God, even as viewed by the best Catholic types, required in almost all cases the abandonment of every other passion. The moral value of such a synthesis consisted solely in the discipline which it established; discipline of whatever kind being preferable to anarchy, which would have given free scope to all the lowest propensities. But notwithstanding all the tender feeling of the best mystics, the supreme affection admitted of no real reciprocity. Moreover, the stupendous nature of the rewards and penalties by which every precept in this arbitrary system was enforced, tended to

weaken the character and to taint our noblest impulses. The essential merit of the system was that it was the first attempt to exercise systematic control over our moral nature. The discipline of Polytheism was usually confined to actions: sometimes it extended to habits; but it never touched the affections from which both habits and actions spring. Christianity took the best means of effecting its purpose that were then available; but it was not successful, except so far as it gave indirect encouragement to our higher feelings. And so vague and absolute were its principles, that even this would have been impossible but for the wisdom of the priesthood, who for a long time warded off dangers incident to so arbitrary a system. But at the close of the Middle Ages when the priesthood became retrograde, and lost at once their morality and their freedom, the doctrine was left to its own impotence, and rapidly degenerated till it became a growing source of degradation and of discord.

But the synthesis based upon Love of Humanity has too deep a foundation in positive truth to be liable to similar decline; and its influence cannot but increase so long as the progress of our race endures. The Great Being who is its object tolerates the most searching enquiry, and yet does not restrict the scope of Imagination. The laws which regulate her existence are now known to us; and the more deeply her nature is investigated, the stronger is our consciousness of her reality and of the greatness of her benefits. The thought of her stimulates the largest exercise of Imagination, and thus enables us to participate in a measure in the universality of her life, throughout the whole extent of Time and Space of which we have any real knowledge. All our intellectual results, whether in art or science, are alike co-ordinated by her worship; for it furnishes the sole bond of connection by which permanent harmony can be established between our thoughts and our feelings. It is the only system which without artifice and without arbitrary restriction, can establish the preponderance of Affection over Thought and Action. It sets forth social feeling as the first principle of morality; without ignoring the natural superiority in strength of the personal instincts. To live for others it holds to be the highest happiness. To become incorporate with Humanity, to sympathise with all her former phases, to foresee her destinies in the future, and to do what lies

in us to forward them; this is what it puts before us as the constant aim of life. Self-love in the Positive system is regarded as the great infirmity of our nature, which unremitting discipline on the part of each individual and of society may materially palliate, but will never radically cure. The degree to which this mastery over our own nature is attained is the truest standard of individual or social progress, since it has the closest relation to the existence of the Great Being, and to the happiness of the elements that compose it.

Positivist prayer.

Inspired as it is by sincere gratitude, which increases the more carefully the grounds for it are examined, the worship of Humanity raises Prayer for the first time above the degrading influence of self-interest. We pray to the Supreme Being; but only to express our deep thankfulness for her present and past benefits, which are an earnest of still greater blessings in the future. Doubtless it is a fact of human nature, that habitual expression of such feelings reacts beneficially on our moral nature; and so far we, too, find in Prayer a noble recompense. But it is one that can suggest to us no selfish thoughts, since it cannot come at all unless it come spontaneously. Our highest happiness consists in Love; and we know that more than any other feeling Love may be strengthened by exercise; that alone of all feelings it admits of, and increases with, simultaneous expansion in all. Humanity will become more familiar to us than the old gods were to the Polytheists, yet without the loss of dignity which in their case was the result. Her nature has in it nothing arbitrary, yet she co-operates with us in the worship that we render, since in honouring her we receive back 'grace for grace.' Homage accepted by the Deity of former times laid him open to the charge of puerile vanity. But the new Deity will accept praise only where it is deserved, and will derive from it equal benefit with ourselves. This perfect reciprocity of affection and of influence is peculiar to Positive religion, because in it alone the object of worship is a Being whose nature is relative, modifiable, and perfectible; composed of her own worshippers, and more perfectly subjected than they to assignable laws; permitting, therefore, her desires and her tendencies to be more distinctly foreseen.

Superiority of Positive morality.

The morality of Positive religion combines all the advantages of spontaneousness with those of demonstration. It is so thoroughly human in all its parts, as to preclude all the subter-

fuges by which repentance for transgression is so often stifled or evaded. By pointing out distinctly the way in which each individual action reacts upon society, it forces us to judge our own conduct without lowering our standard. Some might think it too gentle, and not sufficiently vigorous; yet the love by which it is inspired is no passive feeling, but a principle which strongly stimulates our energies to the full extent compatible with the attainment of that highest good to which it is ever tending. Accepting the truths of science, it teaches that we must look to our own unremitting activity for the only providence by which the rigour of our destiny can be alleviated. We know well that the great Organism, superior though it be to all beings known to us, is yet under the dominion of inscrutable laws, and is in no respect either absolutely perfect or absolutely secure from danger. Every condition of our existence, whether from without or from within, might at some time be compromised, not excepting even our moral and intellectual powers, in which our principal resources are found. Such contingencies are always possible, and yet they are not to prevent us from living nobly; they must not lessen our love, our thought, or our efforts for Humanity; they must not overwhelm us with anxiety, nor urge us to useless complaint. But the very principles which demand this high standard of courage and resignation are themselves well calculated to maintain it. For by making us fully conscious of the greatness of man and by setting us free from the degrading influences of fear, they inspire us with keen interest in our struggle, inadequate though it be, against the pressure of fatalities which are not always beyond our power to modify. And thus the reaction of these fatalities upon our character is turned at last to a most beneficial use. It prevents alike overweening anxiety for our own interests and dull indifference to them; whereas, in theological and metaphysical systems, even when inculcating self-denial, there is always a dangerous tendency to concentrate thought on personal considerations. Dignified resignation to evils which cannot be resisted, wise and energetic action where modification of them is possible; such is the moral standard which Positivism puts forward for individuals and for society.

Catholicism, notwithstanding the radical defects of its doctrine, has unconsciously been influenced by the modern spirit; and at the close of the Middle Ages was tending in a

direction similar to that here described, although its principles were inconsistent with any formal recognition of it. It is only in the countries that have been preserved from Protestantism that any traces are left of these faint efforts of the priesthood to rise above their own theories. The Catholic God would gradually change into a feeble and imperfect representation of Humanity, were not the clergy so degraded socially as to be unable to participate in the spontaneous feelings of the community. It is a tendency too slightly marked to lead to any important result; yet it is a striking proof of the new direction which men's mind and hearts are unconsciously taking in countries which are often supposed to be altogether left behind in the march of modern thought. The clearest indication of it is in their acceptance of the worship of Woman, which is the first step towards the worship of Humanity. Since the twelfth century, the influence of the Virgin, especially in Spain and Italy, has obtained a growing ascendancy against which the priesthood have often fruitlessly protested; sometimes indeed they have found it necessary to sanction it, for the sake of preserving their popularity. The special and privileged adoration which this beautiful creation of Poetry is receiving cannot but produce a marked change in the spirit of Catholicism. It may serve as a connecting link between the religion of our ancestors and that of our descendants, the Virgin becoming gradually regarded as a personification of Humanity. Little, however, will be done in this direction by the established priesthood, even in Italy or Spain. We must look to the purer agency of women, who will be the means of introducing Positivism among our Southern brethren.

All the points then in which the morality of Positive science excels the morality of revealed religion are summed up in the substitution of Love of Humanity for Love of God. It is a principle as adverse to metaphysics as to theology, since it excludes all personal considerations, and places happiness, whether for the individual or for society, in constant exercise of kindly feeling. To love Humanity may be truly said to constitute the whole duty of Man; provided it be clearly understood what such love really implies, and what are the conditions required for maintaining it. The victory of Social Feeling over our innate Self-love is rendered possible only by a slow and difficult training of the heart, in which the intellect must co-

operate. The most important part of this training consists in the mutual love of Man and Woman, with all other family affections which precede and follow it. But every aspect of morality, even the personal virtues, are included in love of Humanity. It furnishes the best measure of their relative importance, and the surest method for laying down incontestable rules of conduct. And thus we find the principles of systematic morality to be identical with those of spontaneous morality, a result which renders Positive doctrine equally accessible to all.

Rise of the new Spiritual power.

Science, therefore, Poetry, and Morality, will alike be regenerated by the new religion, and will ultimately form one harmonious whole, on which the destinies of man will henceforth rest. With women, to whom the first germs of spiritual power are due, this consecration of the rational and imaginative faculties to the service of feeling has always existed spontaneously. But to realise it in social life it must be brought forward in a systematic form as part of a general doctrine. This is what the mediæval system attempted upon the basis of Monotheism. A moral power arose composed of the two elements essential to such a power, the sympathetic influence of women in the family, the systematic influence of the priesthood on public life. As a preliminary attempt the Catholic system was most beneficial; but it could not last, because the synthesis on which it rested was imperfect and unstable. The Catholic doctrine and worship addressed themselves exclusively to our emotional nature, and this only upon uncertain and arbitrary principles. The field of intellect, whether in art or science, as well as that of practical life, would have been left almost untouched but for the personal character of the priests. But with the loss of their political independence, which had been always in danger from the military tendencies of the time, the priesthood rapidly degenerated. The system was in fact premature; and even before the industrial era of modern times had set in, the esthetic and metaphysical movements had already gone too far for its feeble power of control; and it then became hostile to the progressive movement which itself had initiated. Moral qualities without intellectual superiority are not enough for a true spiritual power; they will not enable it to modify to any appreciable extent the strong preponderance of material considerations. Consequently it is the primary

condition of social reorganisation to put an end to the state of utter revolt which the intellect maintains against the heart; a state which has existed ever since the close of the Middle Ages, and the source of which may be traced as far back as the Greek Metaphysicians. Positivism has at last overcome the immense difficulties of this task. Its solution consists in the foundation of social science on the basis of the preliminary sciences, so that at last there is unity of method in our conceptions. Our active faculties have always been guided by the Positive spirit: and by its extension to the sphere of Feeling, a complete synthesis, alike spontaneous and systematic in its nature, is constructed; and every part of our nature is brought under the regenerating influence of the worship of Humanity. Thus a new spiritual power will arise, complete and homogeneous in structure; coherent and at the same time progressive; and better calculated than Catholicism to engage the support of women which is so necessary to its efficient action on society.

Temporal power will always be necessary, but its action will be modified by the spiritual.

Were it not for the material necessities of human life, nothing further would be required for its guidance than a spiritual power such as is here described. We should have in that case no need for any laborious exertion; and universal benevolence would be looked upon as the sovereign good, and would become the direct object of all our efforts. All that would be necessary would be to call our reasoning powers, and still more, our imagination into play, in order to keep this object constantly in view. Purely fictitious as such an hypothesis may be, it is yet an ideal limit to which our actual life should be more and more nearly approximated. As an Utopia, it is a fit subject for the poet: and in his hands it will supply the new religion with resources far superior to any that Christianity derived from vague and unreal pictures of future bliss. In it we may carry out a more perfect social classification, in which men may be ranked by moral and intellectual merit, irrespectively of wealth or position. For the only standard by which in such a state men could be tried would be their capacity to love and to please Humanity.

Such a standard will of course never be practically accepted, and indeed the classification in question would be impossible to effect; yet it should always be present to our minds; and should be contrasted dispassionately with the actual arrangements of social rank, with which power, even where accidentally acquired,

has more to do than worth. The priests of Humanity with the assistance of women will avail themselves largely of this contrast in modifying the existing order. Positivist education will fully explain its moral validity, and in our religious services appeal will frequently be made to it. Although an ideal abstraction, yet being based on reality, except so far as the necessities of daily life are concerned, it will be far more efficacious than the vague and uncertain classification founded on the theological doctrine of a future state. When society learns to admit no other Providence than its own, it will show such a disposition to adopt this ideal classification as will produce a strong effect on the classes who are the best aware of its impracticability. But those who press this contrast must be careful always to respect the natural laws which regulate the distribution of wealth and rank. They have a definite social function, and that function is not to be destroyed, but to be improved and regulated. In order, therefore, to reconcile these conditions, we must limit our ideal classification to individuals, leaving the actual subordination of office and position unaffected. Well-marked personal superiority is not very common; and society would be wasting its powers in useless and interminable controversy if it undertook to give each function to its best organ, thus dispossessing the former functionary without taking into account the conditions of practical experience. Even in the spiritual hierarchy, where it is easier to judge of merit, such a course would be utterly subversive of discipline. But there would be no political danger, and morally there would be great advantage, in pointing out all remarkable cases which illustrate the difference between the order of rank and the order of merit. Respect may be shown to the noblest without compromising the authority of the strongest. St. Bernard was esteemed more highly than any of the Popes of his time; yet in his modest position of abbot he never failed to show the most perfect deférence for the higher functionaries of the Church. A still more striking example was furnished by St. Paul in recognising the official superiority of St. Peter, of whose moral and mental inferiority to himself he must have been well aware. All organised corporations, civil or military, can show instances on a less important scale where the abstract order of merit has been adopted consistently with the concrete order of rank. Where this is the case the contrast has no subversive consequences, and

will be morally beneficial to all classes, at the same time that it proves the imperfection to which so complicated an organism as human society must be ever liable.

Thus the religion of Humanity creates an intellectual and moral power, which, could human life be freed from the pressure of material wants, would suffice for its guidance. Imperfect as our nature assuredly is, yet social sympathy has an intrinsic charm which would make it paramount, but for the imperious necessities by which the instincts of self-preservation are stimulated. So urgent are they, that the greater part of life is necessarily occupied with actions of a self-regarding kind, before which Reason, Imagination, and even Feeling, have to give way. Consequently this twofold spiritual power, which seems so well adapted to govern, must only attempt to modify. Its sympathetic element, in other words, women, accept this necessity without difficulty; for true affection always strives to attain what is right, as soon as it is clearly indicated. But the intellect is far more unwilling to take a subordinate position. Its rash ambition is far more unsettling to the world than the ambition of rank and wealth, against which it so often inveighs. It is the hardest of social problems to regulate the exercise of the intellectual powers, while securing them their due measure of influence; the object being that theoretical power should be able really to modify, and yet should never be permitted to govern. For the nations of antiquity this problem was insoluble; with them the intellect was always either a tyrant or a slave. The solution was attempted in the Middle Ages; but without success, owing to the military and theological character of the times. Positivism relies for solving it on the reality which is one of its principal features, and on the fact that Society has now entered on its industrial phase. Based on accurate enquiry into the past and future destinies of man, its aim is so to regenerate our political action as to transform it ultimately into a practical worship of Humanity; just as Morality is the worship rendered by the affections, Science and Poetry that rendered by the intellect. Such is the principal mission of the Occidental priesthood, a mission in which women and the working classes will actively co-operate.

Substitution of duties for rights.

The most important object of this regenerated polity will be the substitution of Duties for Rights; thus subordinating personal to social considerations. The word *Right* should be ex-

cluded from political language, as the word *Cause* from the language of philosophy. Both are theological and metaphysical conceptions; and the former is as immoral and subversive as the latter is unmeaning and sophistical. Both are alike incompatible with the final state; and their value during the revolutionary period of modern history has simply consisted in their solvent action upon previous systems. Rights, in the strict sense of the word, are possible only so long as power is considered as emanating from a superhuman will. In their opposition to these theocratic rights, the metaphysicians of the last five centuries introduced what they called the rights of Man; a conception the value of which consisted simply in its destructive effects. Whenever it has been taken as the basis of a constructive policy, its anti-social character and its tendency to strengthen individualism have always been apparent. In the Positive state, where no supernatural claims are admissible, the idea of *Right* will entirely disappear. Every one has duties, duties towards all; but rights in the ordinary sense can be claimed by none. Whatever security the individual may require is found in the general acknowledgment of reciprocal obligations; and this gives a moral equivalent for rights hitherto claimed, without the serious political dangers which they involved. In other words, no one henceforth has any Right but that of doing his Duty. The adoption of this principle is the one way of realising the grand ideal of the Middle Ages, the subordination of Politics to Morals. In those times, however, the vast bearings of the question were but very imperfectly apprehended; its solution is incompatible with every form of theology; and is only to be found in Positivism.

The solution consists in regarding our political and social action as the service of Humanity; that is to say the assistance by conscious effort of all functions, whether relating to Order or to Progress, which Humanity has hitherto performed spontaneously. Here lies the ultimate object of Positive religion. Without it all other aspects of that religion would be inadequate, and would soon cease to have any value. True affection does not stop short at desire for good; it strains every effort to attain it. The elevation of soul arising from the act of contemplating and adoring Humanity is not the sole object of religious worship. Above and beyond this there is the motive of becoming better able to serve Humanity; unceasing action on our part being

necessary for her preservation and development. This indeed is the most distinctive feature of Positive religion. The Supreme Being of former times had really little need of human services. The consequence was, that with all theological believers and with monotheists especially, devotion always tended to degenerate into quietism. The danger could only be obviated when the priesthood, skilfully interpreting the general instinct, could take advantage of the vagueness of these theories, and draw from them motives for practical exertion. Nothing could be done in this direction unless the priesthood retained their social independence. As soon as this was taken from them by the usurpation of the temporal power, the more sincere amongst Catholics lapsed into the quietistic spirit which for a long time had been kept in artificial check. In Positivism, on the contrary, the doctrine itself, irrespective of the character of its teachers, is a direct and continuous incentive to exertion of every kind. The reason for this appears at once in the relative and dependent nature of our Supreme Being, of whom her own worshippers form the component parts.

Consensus of the social organsim

In this the fundamental service of Humanity, by which life in all its parts will be penetrated with a religious spirit, the feature most prominent is co-operation, conducted on a vast scale with which less complicated organisms have nothing to compare. The consensus of the social organism extends to Time as well as Space. Hence the two distinct aspects of social sympathy; the feeling of Solidarity, or union with the Present; and of Continuity, or union with the Past. Careful investigation of any social phenomenon, whether relating to Order or to Progress, always proves convergence, direct or indirect, of all contemporaries and of all former generations, within certain geographical and chronological limits; and those limits recede as the development of Humanity advances. In our thoughts and feelings such convergence is unquestionable; and it should be still more evident in our actions, the efficacy of which depends on co-operation to a still greater degree. Here we feel how false as well as immoral is the notion of *Right*, a word which, as commonly used, implies absolute individuality. The only principle on which Politics can be subordinated to Morals is, that individuals should be regarded, not as so many distinct beings, but as organs of one Supreme Being. Indeed, in all settled states of society, the individual has always been

considered as a public functionary, filling more or less efficiently a definite post, whether formally appointed to it or not. So fundamental a principle has ever been recognised instinctively up to the period of revolutionary transition, which is now at length coming to an end; a period in which the obstructive and corrupt character of organised society roused a spirit of anarchy which, though at first favourable to Progress, has now become an obstacle to it. Positivism, however, will place this principle beyond reach of attack, by giving a systematic demonstration of it, based on the sum of our scientific knowledge.

Continuity of the past with the present.

And this demonstration will be the intellectual basis on which the moral authority of the new priesthood will rest. What they have to do is to show the dependence of each important question, as it arises, upon social co-operation, and by this means to indicate the right path of duty. For this purpose all their scientific knowledge and esthetic power will be needed; otherwise social feeling could never be developed sufficiently to produce any strong effect upon conduct. It would never, that is, go further than the feeling of mere solidarity with the Present, which is only its incipient and rudimentary form. We see this unfortunate narrowness of view too often in the best socialists, who, leaving the Present without roots in the Past, would carry us headlong towards an undetermined Future. In all social phenomena, and especially in those of modern times, the participation of our predecessors is greater than that of our contemporaries. This truth is strikingly apparent in industrial undertakings, for which the combination of efforts required is so vast. It is our filiation with the Past, even more than our connection with the Present, which teaches us that the only real life is the collective life of the race; that individual life has no existence except as an abstraction. Continuity is the feature which distinguishes our race from all others. Many of the lower races are able to form a union among their living members; but it was reserved for Man to conceive and realise co-operation of successive generations, the source to which the gradual growth of civilisation is to be traced. Social sympathy then is a barren and imperfect feeling, and indeed it is a cause of disturbance, so long as it extends no further than the present time. It is a disregard for historical Continuity which induces that mistaken antipathy to all forms of inheritance which is now so common. Scientific study of history would soon convince those of our

socialist writers who are sincere of their radical error in this respect. If they were more familiar with the collective inheritance of society, the value of which no one can seriously dispute, they would feel less objection to inheritance in its application to individuals or families. Practical experience, moreover, bringing them into contact with the facts of the case, will gradually show them that without the sense of Continuity there can be no right appreciation even of Solidarity. For, in the first place, each individual in the course of his growth passes spontaneously through phases corresponding in a great measure to those of our historical development; and therefore, without some knowledge of the history of society, he cannot understand the history of his own life. Again, each of these successive phases may be found amongst the less advanced nations who do not as yet share in the general progress of Humanity; so that we cannot properly sympathise with these nations, if we ignore the successive stages of development in Western Europe. The nobler socialists and communists, those especially who belong to the working classes, will soon be alive to the error and danger of these inconsistencies, and will supply this deficiency in their education which at present vitiates their efforts. With women, the purest and most spontaneous element of the moderating power, the priests of Humanity will find it less difficult to introduce the broad principles of historical science. They are more inclined than any other class to recognise our continuity with the Past, being themselves its original source.

Necessity of a spiritual power to study and teach these truths; standing apart from the temporal power, and thus securing alike freedom and convergence.

Without a scientific basis, therefore, a basis which must itself rest on the whole sum of Positive speculation, it is impossible for our social sympathies to develop themselves fully, so as to extend not to the Present only, but also and still more strongly to the Past. And this is the first motive, a motive founded alike on moral and on intellectual considerations, for the separation of temporal from spiritual power in the final organisation of society. The more vigorously we concentrate our efforts upon social progress, the more clearly shall we feel the impossibility of modifying social phenomena without knowledge of the laws that regulate them. This involves the existence of an intellectual class specially devoted to this difficult study, and invested with the consultative authority for which their knowledge qualifies them, as also with the function of teaching necessary for the diffusion of their principles. In the

minor arts of life it is generally recognised that principles should be investigated and taught by thinkers who are not concerned in applying them. In the art of Social Life, so far more difficult and important than any other, the separation of theory from practice rests on even stronger grounds. The wisdom of such a course is obvious, and all opposition to it will be overcome, as soon as it becomes generally recognised that social phenomena are subject to invariable laws: laws of so complicated a character and so dependent upon other sciences as to make it doubly necessary that minds of the highest order should be specially devoted to their interpretation.

But there is another aspect of the question of not less importance in sound polity. Separation of temporal from spiritual power is as necessary for free individual activity as for social co-operation. Humanity is characterised by the independence as well as by the convergence of the individuals or families of which she is composed. The latter condition, convergence, is that which secures Order; but the former is no less essential to Progress. Both are alike urgent: yet in ancient times they were incompatible, for the reason that spiritual and temporal power were always in the same hands; in the hands of the priests in some cases, at other times in those of the military chief. As long as the State held together, the independence of the individual was habitually sacrificed to the convergence of the body politic. This explains why the conception of Progress never arose, even in the minds of the most visionary schemers. The two conditions were irreconcileable until the Middle Ages, when a remarkable attempt was made to separate the modifying power from the governing power, and so to make Politics subordinate to Morals. Co-operation of efforts was now placed on a different footing. It was the result of free assent rendered by the heart and understanding to a religious system which laid down general rules of conduct, in which nothing was arbitrary, and which were applied to governors as strictly as to their subjects. The consequence was that Catholicism, notwithstanding its extreme defects intellectually and socially, produced moral and political results of very great value. Chivalry arose, a type of life in which the most vigorous independence was combined with the most intense devotion to a common cause. Every class in Western Society was elevated by this union of personal dignity

with universal brotherhood. So well is human nature adapted for this combination, that it was carried speedily into effect under the first synthesis capable of proposing it. With the necessary decay of the religious creed, it became seriously impaired, but yet was preserved instinctively, especially in countries preserved from Protestantism. By it the mediæval system prepared the way for the conception of Humanity; since it put an end to the fatal opposition in which the two characteristic attributes of Humanity, independence and co-operation, had hitherto existed. Thus, the same stage of progress which brought into theological religion that provisional unity from which its decline is to be dated, paved the way long beforehand for the more complete and more real principle of unity, on which human society will be finally organised.

But meritorious and effective as this premature attempt was, it was no real solution of the problem. The spirit and temper of the period were not ripe for any definite solution. Theological belief and military life were alike inconsistent with any permanent separation of theoretical and practical powers. It was maintained only for a few centuries precariously and inadequately, by a sort of natural balance or rather oscillation between imperialism and theocracy. But the positive spirit and the industrial character of modern times tend naturally to this division of power; and when it has been consciously recognised as a principle, the difficulty of reconciling co-operation with independence will exist no longer. For in the first place, the rules to which human conduct will be subjected, will rest, as in Catholic times, but to a still higher degree, upon persuasion and conviction, instead of compulsion. Again, the fact of the new faith being always susceptible of demonstration, renders the spiritual system based on it more elevating as well as more durable. The rules of Catholic morality were only saved from being arbitrary by the introduction of a supernatural Will as a substitute for mere human authority. The plan had undoubtedly many advantages; but liberty in the true sense was not secured by it, since the rules remained as before without explanation; it was only their source that was changed. Still less successful was the subsequent attempt of metaphysicians to prove that submission to government was the foundation of virtue. It was only a return to the old system of arbitrary wills, stripped of the theocratic sanction to which all

its claims to respect and its freedom from caprice had been due. The only way to reconcile independence with social union, and thereby to reach true liberty, lies in obedience to the objective laws of the world and of human nature; clearing these as far as possible of all that is subjective, and thus rendering them amenable to scientific demonstration. Such will be the incalculable benefit of extending the scientific method to the complex and important phenomena of human nature. Man will no longer be the slave of man; he yields only to external Law; and to this those who demonstrate it to him are as submissive as himself. In such obedience there can be no degradation even where the laws are inflexible. But, as Positivism shows us, in most cases they are modifiable, and this especially in the case of our mental and moral constitution. Consequently our obedience is here no longer passive obedience: it implies the devotion of every faculty of our nature to the improvement of a world of which we are in a true sense masters. The natural laws to which we owe submission furnish the basis for our intervention; they direct our efforts and give stability to our purpose. The more perfectly they are known, the more free will our conduct become from arbitrary command or servile obedience. True, our knowledge of these laws will very seldom attain such precision as to enable us to do altogether without compulsory authority. And here, when the intellect is inadequate, the heart must take its place. There are certain rules of life for which it is difficult to assign the exact ground, and where affection must assist reason in supplying motives for obedience. Wholly to dispense with arbitrary authority is impossible; nor will it degrade us to submit to it, provided that it be always regarded as secondary to the uniform supremacy of external Laws, and that every step in the development of our mental and moral powers shall restrict its employment. Both conditions are evidently satisfied in the Positive system of life. The tendency of modern industry and science is to make us less dependent on individual caprice, as well as more assimilable to the universal Organism. Positivism therefore secures the liberty and dignity of man by its demonstration that social phenomena, like all others, are subject to natural laws, which, within certain limits, are modifiable by wise action on the part of society. Totally contrary, on the other hand, is the spirit of metaphysical schemes of polity, in which society is supposed to

have no spontaneous impulses, and is handed over to the will of the legislator. In these degrading and oppressive schemes, union is purchased, as in ancient times, by the death of freedom.

In these two ways, then, Positive religion influences the practical life of Humanity, in accordance with the natural laws that regulate her existence. First, the sense of Solidarity with the Present is perfected by adding to it the sense of Continuity with the Past; secondly, the co-operation of her individual agents is rendered compatible with their independence. Not till this is done can Politics become really subordinate to Morals, and the feeling of Duty be substituted for that of Right. Our active powers will be modified by the combined influence of feeling and reason, as expressed in indisputable rules which it will be for the spiritual power to make known to us. Temporal government, whoever its administrators may be, will always be modified by morality. Whereas in all metaphysical systems of polity nothing is provided for but the modes of access to government and the limits of its various departments; no principles are given to direct its application or to enable us to form a right judgment of it.

Nutritive functions of Humanity, performed by Capitalists, as the temporal power.

From this general view of the practical service of Humanity, we pass now to the two leading divisions of the subject; with the view of completing our conception of the fundamental principle of Positive Polity, the separation of temporal from spiritual power.

The action of Humanity relates either to her external circumstances, or to the facts of her own nature. Each of these two great functions involves both Order and Progress; but the first relates more specially to the preservation of her existence, the second to her progressive development. Humanity, like every other organism, has to act unceasingly on the surrounding world in order to maintain and extend her material existence. Thus the chief object of her practical life is to satisfy the wants of our physical nature, wants which necessitate continual reproduction of materials in sufficient quantities. This production soon comes to depend more on the co-operation of successive generations than on that of contemporaries. Even in these lower but indispensable functions, we work principally for our successors, and the results that we enjoy are in great part due to those that have gone before us. Each generation produces more material wealth than is required for its own

wants; and the use of the surplus is to facilitate the labour and prepare the maintenance of the generation following. The agents in this transmission of wealth naturally take the lead in the industrial movement; since the possession of provisions and instruments of production gives an advantage which can only be lost by unusual incapacity. And this will seldom happen, because capital naturally tends to accumulate with those who make a cautious and skilful use of it.

Such then will be the temporal chiefs of modern society. Their office is consecrated in Positive religion as that of the nutritive organs of Humanity; organs which collect and prepare the materials necessary for life, and which also distribute them, subject always to the influence of a modifying central organ. Stimulated to pride by the direct and palpable importance of their functions, and strongly influenced in every respect by personal instincts, without which the vigour of their energies could seldom be sustained, they are naturally prone to abuse their power, and to govern by the ignoble method of compulsion, disregarding all appeals to reason and to morality. Hence the need of a combination of moral forces to exercise a constant check upon the hardness with which they are so apt to use their authority. And this leads us to the second of the two great functions of Humanity.

These are modified by the cerebral functions, performed by the three elements of the spiritual power.

This function is analogous to that of Innervation in individuals. Its object is the advancement of Humanity, whether in physical or still more in intellectual and moral aspects. It might seem at first sight restricted, as in lower organisms, to the secondary office of assisting the nutritive function. Soon however it develops qualities peculiar to itself, and on which our highest happiness depends. And thus we might imagine that life was to be entirely given up to the free play of reason, imagination, and feeling, were we not constantly forced back by the necessities of our physical nature to less delightful occupations. Therefore this intellectual and moral function, notwithstanding its eminence, can never be supreme in our nature; yet independently of its intrinsic charm, it forms our principal means, whether used consciously or otherwise, in controlling the somewhat blind action of the nutritive organs. It is in women, whose function is analogous to that of the affective organs in the individual brain, that we find this modifying influence in its purest and most spontaneous form. But the

full value of their influence is not realised until they act in combination with the philosophic class; which, though its direct energy is small, is as indispensable to the collective Organism as the speculative functions of the brain are to the individual. Besides these two essential elements of moral power, we find, when Humanity reaches her maturity, a third element which completes the constitution of this power and furnishes a basis for its political action. This third element is the working class, whose influence may be regarded as the active function in the innervation of the social Organism.

It is indeed to the working class that we look for the only possible solution of the great human problem, the victory of Social feeling over Self-love. Their want of leisure, and their poverty, excludes them from political power; and yet wealth, which is the basis of that power, cannot be produced without them. They are allied to the spiritual power by the similarity of their tastes and of their circumstances. Moreover, they look to it for systematic education, of the importance of which not merely to their happiness, but to their dignity and moral culture, they are deeply conscious. The nature of their occupations, though absorbing so large a portion of their time, yet leaves the mind for the most part free. Finding little in the specialities of their work to interest them, they are the more inclined to rise to general principles, provided always that such principles combine utility with reality. Knowing nothing of the passionate desire of other classes for rank and wealth, they are the more disposed to give free play to generous feelings, the value and the charm of which is more strongly impressed on them by their experience of life. As their strength lies in numbers, they have a greater tendency to union than capitalists, each of whom has in his own hands a power which he is apt to suppose resistless, and which prompts him to isolation. They will give their energetic support to the priesthood in its efforts to control the abuse of the power of wealth, and in every respect they are prepared to accept and enforce its moral influence. Being at once special and general, practical and speculative, and at the same time always animated by strong sympathies, they form an intermediate link between the practical and theoretical powers: connected with the one by the need of education and counsel, and with the other by the necessities of labour and subsistence. The people represent the activity of the Supreme

Being, as women represent its sympathy, and philosophers its intellect.

Capitalists not to be coerced politically.

But in the organised action of these three organs of innervation upon the organs of social nutrition, it must be borne in mind that the latter are not to be impeded in their functions. The control exercised is to be of a kind that will ennoble them by setting their importance in its true light. True, we are not to encourage the foolish and immoral pride of modern capitalists, who look upon themselves as the creators and sole arbiters of their material power, the foundations of which are in reality due to the combined action of their predecessors and contemporaries. They ought to be regarded simply as public functionaries, responsible for the administration of capital and the direction of industrial enterprise. But at the same time we must be careful not to underrate the immense value of their function, or in any way obstruct its performance. All this follows at once from the policy of Separation of Powers. The responsibility under which it is here proposed to place capitalists is purely moral, whereas metaphysicians of the revolutionary school have always been in favour of political coercion. In cases where the rich neglect their duty, the Positive priesthood will resort in the first instance to every method of conviction and persuasion that can be suggested by the education which the rich have received in common with other classes. Should this course fail, there remains the resource of pronouncing formal condemnation of their conduct; and supposing this to be ratified by the working men of every city, and the women of every family, its effect will be difficult to withstand. In very heinous cases, it might be necessary to proceed to the extreme length of social excommunication, the efficacy of which, in cases where it deserved and received general assent, would be even greater than in the Middle Ages; the organisation of the spiritual power in those times being very imperfect. But even in this case the means used for repression are of a purely moral kind. The increasingly rare cases that call for political measures belong exclusively to the province of the temporal power.

Inheritance to be respected.

Hereditary transmission of wealth has been strongly condemned by metaphysical writers. But it is after all a natural mode of transmission, and the moral discipline above described will be a sufficient check upon its worst abuses. When the

sense of Duty is substituted for the sense of Right, it matters little who may be the possessor of any given power, provided it be well used. Besides, inheritance, as Positivism shows, has great social advantages, especially when applied to functions which require no extraordinary capacity, and which are best learnt in the training of domestic life. Taking the moral point of view, we find that men who have been always accustomed to wealth are more disposed to be generous than those who have amassed it gradually, however honourable the means used. Inheritance was originally the mode in which all functions were transmitted; and in the case of wealth there is no reason why it should not always continue, since the mere preservation of wealth, without reference to its employment, requires but little special ability. There is no guarantee that, if other guardians of capital were appointed, the public would be better served. Modern industry has long ago proved the administrative superiority of private enterprise in commercial transactions; and all social functions that admit of it will gradually pass into private management, always excepting the great theoretic functions, in which combined action will always be necessary. Declaim as the envious will against hereditary wealth, its possessors, when they have a good disposition moulded by a wise education and a healthy state of public opinion, will in many cases rank amongst the most useful organs of Humanity. It is not the classes who constitute the moral force of society, poor as they are, that will give vent to these idle complaints; or at least they will be confined to those individuals among them who fail to understand the dignity and value of their common mission of elevating man's affections, intellect, and energies.

Women and priests to have their material subsistence guaranteed.

The only cases in which the spiritual power has to interfere specially for the protection of material interests fall under two principles, which are very plainly indicated by the natural order of society. The first principle is, that Man should support Woman; the second, that the Active class should support the Speculative class. The necessity of both these conditions is evident; without them the affective and speculative functions of Humanity cannot be adequately performed. Private and public welfare are so deeply involved in the influence exercised by Feeling over the intellectual and active powers, that we shall do well to secure that influence, even at the cost of removing one half of the race from industrial occupations. Even in the lowest

tribes of savages we find the stronger sex recognising some obligations towards the weaker; and it is this which distinguishes human love, even in its coarser forms, from animal appetite. With every step in the progress of Humanity we find the obligation more distinctly acknowledged, and more fully satisfied. In Positive religion it becomes a fundamental duty, for which each individual, or even, when it may be necessary, Society as a whole will be held responsible. As to the second principle, it is one which has been already admitted by former systems; and, in spite of the anarchy in which we live, it has never been wholly discarded, at least in countries which have been unaffected by the individualist tendencies of Protestantism. Positivism, however, while adopting the principle as indispensable to the theoretic functions of Humanity, will employ it far more sparingly than Catholicism, the natural decay of which was very much hastened by its excessive wealth. If temporal and spiritual power are really to be separated, philosophers should have as little to do with wealth as with government. Resembling women in their exclusion from political power, their position as to wealth should be like that of the working classes, proper regard being had to the requirements of their office. By following this course, they may be confident that the purity of their opinions and advice will never be called in question.

These two conditions then, Capitalists, as the normal administrators of the common fund of wealth, will be expected to satisfy. They must, that is, so regulate the distribution of wages, that women shall be released from work; and they must see that proper remuneration is given for intellectual labour. To exact the performance of these conditions seems no easy task; yet until they are satisfied, the equilibrium of our social economy will remain unstable. The present holders of a position which is no longer tenable on the imaginary ground of personal right, may probably decline to accept these principles. In that case, their functions will pass in one way or another to new organs, until Humanity finds servants who will not shirk their fundamental duties, but who will recognise them as the first condition of their tenure of power. That power, subject to these limitations, will then be regarded with the highest respect, for all will feel that the existence of Humanity depends on it. Alike on intellectual and on moral grounds, society will repudiate the envious passions and subversive views which are

aroused at present by the unfounded claims of property, and by its repudiation, since the Middle Ages, of every real moral obligation. Rich men will feel that principles like these, leaving as they do to the individual the merit of voluntary action, are the only method of escaping from the political oppression with which they are now threatened. The free concentration of capital will then be readily accepted as necessary to its social usefulness; for great duties imply great powers.

Normal relation of priests, people, and capitalists.

This then, is the way in which the priests of Humanity may hope to regenerate the material power of wealth, and bring the nutritive functions of society into harmony with the other parts of the body politic. The contests for which as yet there are but too many motives, will then cease; the People without loss of dignity will give free play to their natural instincts of respect, and will be as willing to accept the authority of their political rulers as to place confidence in their spiritual guides. They will feel that true happiness has no necessary connection with wealth; that it depends far more on free play being given to their intellectual, moral, and social qualities; and that in this respect they are more favourably situated than those above them. They will cease to aspire to the enjoyments of avarice and ambition, leaving them to those whose political activity requires that strong stimulus. Each man's ambition will be to do his work well; and after it is over, to perform his more general function of assisting the spiritual power, and of taking part in the formation of Public Opinion, by giving his best judgment upon passing events. Of the limits to be observed by the spiritual power the People will be well aware; and they will accept none which does not subordinate the intellect to the heart, and guarantee the purity of true science by strict abstinence from political power. By an appeal to the principles of Positive Polity, they will at once check any foolish yielding on the part of philosophers to political ambition, and will restore the temporal power to its proper place. They will be aware that though the general principles of practical life rest upon Science, it is not for Science to direct their application. The incapacity of theorists to apply their theories practically has long been recognised in minor matters, and it will now be recognised as equally applicable to political questions. The province of the philosopher is education; and as the result of education, counsel: the province of the capitalist is action and authorita-

tive direction. This is the only right distribution of power; and the people will insist on maintaining it in its integrity, seeing how indispensable it is to the harmonious existence of Humanity.

We are not yet ripe for the normal state. But the revolution of 1848 is a step towards it.

From this view of the practical side of the religion of Humanity taken in connection with its intellectual and moral side, we may form a general conception of the final reorganisation of political institutions, by which alone the great Revolution can be brought to a close. But the time for effecting this reconstruction has not yet come. There must be a previous reconstruction of opinions and habits of life upon the basis laid down by Positivism; and for this at least one generation is required. In the interval, all political measures must retain their provisional character, although in framing them the final state is always to be taken into account. As yet nothing can be said to have been established, except the moral principle on which Positivism rests, the subordination of Politics to Morals. For this is in fact implicitly involved in the proclamation of a Republic in France; a step which cannot now be recalled, and which implies that each citizen is to devote all his faculties to the service of Humanity. But as to the social organisation by which alone this principle can be carried into effect, although its basis has been laid down by Positivism, it has not yet received the sanction of the Public. It may be hoped, however, that the motto which I have put forward as descriptive of the new political philosophy, *Order and Progress*, will soon be adopted spontaneously.

First revolutionary motto; Liberty and Equality.

The first or negative phase of the Revolution in which all that was done was utterly to repudiate the old political system, no indication whatever being given of the state of things which was to succeed it, was accurately summed up in its motto, *Liberty and Equality*, a phrase perfectly contradictory, and incompatible with any real organisation. For obviously, Liberty gives free scope to superiority of all kinds, and especially to moral and mental superiority; so that if a uniform level is to be maintained, freedom of growth is checked. Yet inconsistent as the motto was, it was admirably adapted to the destructive temper of a time when hatred of the Past compensated the lack of insight into the Future. It had, too, a progressive tendency, which partly neutralised its subversive spirit. It inspired the first attempt to derive true principles of polity from general

views of history; the memorable though unsuccessful essay of my great predecessor Condorcet. Thus the first intimation of the future influence of the historical spirit was given at the very time when the anti-historical spirit had reached its climax.

The long period of reaction which succeeded the first crisis gave rise to no political motto of any importance. It was a period for which men of any vigour of thought and character could not but feel secret repugnance. It produced, however, a universal conviction that the metaphysical policy of the revolutionists was of no avail for constructive purposes. And it gave rise to the historical works of the Neo-Catholic school, which prepared the way for Positivism by giving the first fair appreciation of the Middle Ages.

Second motto; Liberty and Order.

But the Counter-revolution, begun by Robespierre, developed by Bonaparte, and continued by the Bourbons, came to an end in the memorable outbreak of 1830. A neutral period of eighteen years followed, and a new motto, *Liberty and Public Order*, was temporarily adopted. This motto was very expressive of the political condition of the time: and the more so that it arose spontaneously, without ever receiving any formal sanction. It expressed the general feeling of the public, who, feeling that the secret of the political future was possessed by none of the existing parties, contented itself with pointing out the two conditions essential as a preparation for it. It was a far nearer approach than the former to an expression of the constructive purpose of the Revolution. The anti-social notion of Equality was eliminated: all its moral advantages without its political dangers existing already in the feeling of Fraternity, which, since the Middle Ages, has become sufficiently diffused in Western Europe to need no special formula. Again, this motto introduced empirically the great conception of Order; understanding it of course in the limited sense of material order at home and abroad. No deeper meaning was likely to be attached to the word in a time of such mental and moral anarchy.

Third motto; Order and Progress.

But with the adoption of the Republican principle in 1848, the utility of this provisional motto ceased. For the Revolution now entered upon its positive phase; which indeed for all philosophical minds, had been already inaugurated by my discovery of the laws of Social Science. But the fact of its having fallen into disuse is no reason for going back to the old revolutionary motto, which since the crisis of 1789 has ceased to be

appropriate. In the utter absence of social convictions it has obtained a sort of official resuscitation; but this will not prevent men of good sense and right feeling from adopting spontaneously the motto *Order and Progress*, as the principle of all political action for the future. In the second chapter I dwelt upon it at some length, and pointed out its political and philosophical meaning. I have now only to show its connection with the other mottoes of which we have been speaking and the probability of its adoption. Each of them, like all combinations, whether in the moral or physical world, is composed of two elements; and the last has one of its elements in common with the second, as the second has in common with the first. Moreover, Liberty, the element common to the two first, is in reality contained in the third; since all Progress implies Liberty. But Order is put foremost, because the word is here intended to cover the whole field that properly belongs to it, including things private as well as public, theoretical as well as practical, moral as well as political. Progress is put next, as the end for which Order exists, and as the mode in which it should be manifested. This conception, for which the crisis of 1789 prepared the way, will be our guiding principle throughout the constructive phase of the Western Revolution. The reconciliation of Order and Progress, which had hitherto been impossible, is now an accepted fact for all advanced minds. For the public this is not yet the case; but since the close of the Counter-revolution in 1830, all minds have been tending unconsciously in this direction. The tendency becomes still more striking by contrast with an opposite movement, the increasing identity of principles between the reactionary and the anarchist schools.

Provisional policy for the period of transition.

But even if we suppose accomplished what is yet only in prospect, even if the fundamental principle of our future polity were accepted and publicly ratified by the adoption of this motto, yet permanent reconstruction of political institutions would still be premature. Before this can be attempted, the spiritual interregnum must be terminated. For this object, in which all hearts and minds, especially among the working classes and among women, must unite their efforts with those of the philosophic priesthood, at least one generation is required. During this period governmental policy should be avowedly provisional; its one object should be to maintain what is so essential to our state of transition, Order, at home and abroad.

Here, too, Positivism suffices for the task; by explaining on historical principles the stage that we have left, and that at which we shall ultimately arrive, it enables us to understand the character of the intermediate stage.

Popular dictatorship with freedom of speech.

The solution of the problem consists in a new revolutionary government, adapted to the Positive phase of the Revolution, as the admirable institutions of the Convention were to its negative phase. The principal features of such a government should be perfect freedom of speech and discussion, and at the same time political preponderance of the central authority with proper guarantees for its purity. To secure perfect freedom of discussion, various measures should be taken. All penalties and fines which at present hamper such discussion should be abolished, the only check left being the obligation of signature. Again, all difficulties in the way of criticising the private character of public men, due to the disgraceful legislation of the psychologists, should be removed. Lastly, all official grants to theological and metaphysical institutions should be discontinued; for while these last, freedom of instruction in the true sense cannot be said to exist. With such substantial guarantees there will be little fear of reactionary tendencies on the part of the executive; and consequently no danger in allowing it to take that ascendancy over the electoral body which, in the present state of mental and moral anarchy, is absolutely necessary for the maintenance of material order. On this plan the French assembly would be reduced to about two hundred members: and its only duty would be to vote the budget proposed by the finance committee of government, and to audit the accounts of the past year. All executive or legislative measures would come within the province of the central power; the only condition being that they should first be submitted to free discussion, whether by journals, public meetings, or individual thinkers, though such discussion should not bind the government legally. The progressive character of the government thus guaranteed, we have next to see that the men who compose it shall be such as are likely to carry out the provisional and purely practical purpose with which it is instituted. On Positive principles, it is to the working classes that we should look for the only statesmen worthy of succeeding to the statesmen of the Convention. Three of such men would be required for the central government. They would combine the functions of a ministry

with those of monarchy, one of them taking the direction of Foreign affairs, another of Home affairs, the third of Finance. They would convoke and dissolve the representative assembly on their own responsibility. Of this body the majority would in a short time, without any law to that effect, consist of the larger capitalists; for the office would be gratuitous, and the duties would be of a kind for which their ordinary avocations fitted them. Changes would occasionally be necessary in the central government; but since it would consist of three persons, its continuity might be maintained, and the traditions of the previous generation, as well as the tendencies of the future, and the position actually existing, might all be represented.

Such a government, though of course retaining some revolutionary features, would come as near to the normal state as is at present practicable. For its province would be entirely limited to material questions, and the only anomaly of importance would be the fact of choosing rulers from the working classes. Normally, this class is excluded from political administration, which falls ultimately into the hands of capitalists. But the anomaly is so obviously dependent simply on the present condition of affairs, and will be so restricted in its application, that the working classes are not likely to be seriously demoralised by it. The primary object being to infuse morality into practical life, it is clear that working men, whose minds and hearts are peculiarly accessible to moral influence, are for the present best qualified for political power. No check meantime is placed on the action of the capitalists; and this provisional policy prepares the way for their ultimate accession to power, by convincing them of the urgent need of private and public regeneration, without which they can never be worthy of it. By this course, too, it becomes easier to bring the consultative influence of a spiritual power to bear upon modern government. At first such influence can only be exercised spontaneously; but it will become more and more systematic with every new step in the great philosophical renovation on which the final reorganisation of society is based.

The propriety of the provisional policy here recommended is further illustrated by the wide scope of its application. Although suggested by the difficulties peculiar to the position of France, it is equally adapted to other nations who are sufficiently advanced to take part in the great revolutionary crisis. Thus

the second phase of the Revolution is at once distinguished from the first, by having an Occidental, as opposed to a purely National, character. And the fact of the executive government being composed of working men, points in the same direction; since of all classes working men are the most free from local prejudices, and have the strongest tendencies, both intellectually and morally, to universal union. Even should this form of government be limited for some years to France, it would be enough to remodel the old system of diplomacy throughout the West.

Such are the advantages which the second revolutionary government will derive from the possession of systematic principles; whereas the government of the Convention was left to its empirical judgments, and had nothing but its progressive instincts to correct them.

A special Report was published in August 1848 by the Positivist Society, in which the subject of provisional government will be found discussed in greater detail.

Positive Committee for Western Europe.

Quiet at home and peace abroad being thus secured, we shall be able, notwithstanding the continuance of mental and moral anarchy, to proceed actively with the vast work of social regeneration, with the certainty of full liberty of thought and expression. For this purpose it will be desirable to institute the philosophical and political association to which I alluded in the last volume of my 'Positive Philosophy' (published in 1842), under the title of 'Positive Occidental Committee.' Its sittings would usually be held in Paris, and it would consist, in the first place, of eight Frenchmen, seven Englishmen, six Germans, five Italians, and four Spaniards. This would be enough to represent fairly the principal divisions of each population. The Germanic population, for instance, might send a Dutchman, a Prussian, a Swede, a Dane, a Bavarian, and an Austrian. So, too, the Italian members might come respectively from Piedmont, Lombardy, Tuscany, the Roman States, and the two Sicilies. Again, Catalonia, Castille, Andalusia, and Portugal would adequately represent the Spanish Peninsula.

Thus we should have a sort of permanent Council of the new Church. Each of the three elements of the moderating power should be admitted into it; and it might also contain such members of the governing class as were sufficiently regenerated to be of use in forwarding the general movement. There should

be practical men in this council as well as philosophers. Here, as elsewhere, it will be principally from the working classes that such practical co-operation will come; but no support, if given sincerely, will be rejected, even should it emanate from the classes who are destined to extinction. It is also most important for the purposes of this Council that the third element of the moderating power, women, should be included in it, so as to represent the fundamental principle of the preponderance of the heart over the understanding. Six ladies should be chosen in addition to the thirty members above mentioned: of these, two would be French, and one from each of the other nations. Besides their ordinary sphere of influence, it will be their special duty to disseminate Positivism among our Southern brethren. It is an office that I had reserved for my saintly colleague, who, but for her premature death, would have rendered eminent service in such a Council.

While material order is maintained in each nation by its own government, the members of the Council, as pioneers of the final order of society, will be carrying on the European movement, and gradually terminating the spiritual interregnum, which is now the sole obstacle to social regeneration. They will forward the development and diffusion of Positivism, and make practical application of its principles, in all ways that are honourably open to them. Instruction of all kinds, oral or written, popular or philosophic, will fall within their province; but their chief aim will be to inaugurate the worship of Humanity so far as that is possible. And already a beginning is possible, so far at least as the system of commemoration is concerned. Politically they may give a direct proof of the international character of the Positive system, by bringing forward several measures, the utility of which has long been recognised, but which have been neglected for want of some central authority placed beyond the reach of national rivalry.

Occidental navy.

One of the most important of such measures would be the establishment of a Western naval force, with the twofold object of protecting the seas, and of assisting geographical and scientific discovery. It should be recruited and supported by all five branches of the Occidental family, and would thus be a good substitute for the admirable institution of maritime Chivalry which fell with Catholicism. Its flag would naturally bear the Positivist motto, the first sign of its public adoption.

Another measure, conceived in the same spirit, would soon follow, one which has been long desired, but which, owing to the anarchy prevalent throughout the West since the decline of Catholicism, has never yet been carried out. The consent of the various governments will be obtained to a common monetary standard, by which industrial transactions will be greatly facilitated. Three spheres made respectively of gold, silver, and platinum, and each weighing fifty grammes, would differ sufficiently in value for the purpose. The sphere should have a small flattened base, and on the great circle parallel to it the Positivist motto would be inscribed. At the pole would be the image of the immortal Charlemagne, the founder of the Western Republic, and round the image his name would be engraved, in its Latin form, Carolus; that name, respected as it is by all nations of Europe alike, would be the common appellation of the universal monetary standard. International coinage.

The adoption of such measures would soon bring the Positivist Committee into favour. Many others might be suggested, relating directly to its fundamental purpose, which need not be specially mentioned here. I will only suggest the foundation, by voluntary effort, of an Occidental School, to serve as the nucleus of a true philosophic class. The students would ultimately enter the Positivist priesthood; they would in most instances come from the working class, without, however, excluding real talent from whatever quarter. By their agency the septennial course of Positive teaching might be introduced in all places disposed to receive it. They would besides supply voluntary missionaries, who would preach the doctrine everywhere, even outside the limits of Western Europe, according to the plan hereafter to be explained. The travels of Positivist workmen, in the ordinary duties of their calling, would greatly facilitate this work. Occidental school.

A more detailed view of this provisional system of instruction will be found in the second edition of the 'Report on the Subject of a Positive School,' published by the Positivist Society in 1849.

There is another step which might be taken, relating not merely to the period of transition, but also to the normal state. A flag suitable to the Western Republic might be adopted, which with slight alterations would also be the flag for each nation. The want of such a symbol is already instinctively felt. Flag for the Western Republic.

What is wanted is a substitute for the old retrograde symbols, which yet shall avoid all subversive tendencies. It would be a suitable inauguration of the period of transition which we are now entering, if the colours and mottoes appropriate to the final state were adopted at its outset.

To speak first of the banner to be used in religious services. It should be painted on canvas; on one side the ground would be white; on it would be the emblem of Humanity, pictured as a woman of thirty years of age, bearing her son in her arms. The other side would bear the religious formula of Positivists: *Love is our Principle, Order is our Basis, Progress our End*, upon a ground of green, the colour of hope and therefore most suitable for emblems of the future.

Green, too, would be the colour of the political flag, common to the whole West. As it is intended to float freely, it does not admit of painting: but the carved image of Humanity might be placed at the banner-pole. The principal motto of Positivism will, in this case, be divided into two, both alike significant. One side of the flag will have the political and scientific motto, Order and Progress; the other, the moral and esthetic motto, Live for Others. The first will be preferred by men; the other is more specially adapted to women, who are thus invited to participate in these public manifestations of social feeling.

This point settled, the question of the various national flags becomes easy. In these the centre might be green, and the national colours might be displayed on the border. Thus, in France, where the innovation will be first introduced, the border would be tricolour, with the present arrangement of colours, except that more space should be given to the white, in honour of our old royal flag. In this way uniformity would be combined with variety; and, moreover, it would be shown that the new feeling of Occidentality is perfectly compatible with respect for the smallest nationalities. Each would retain the old signs in combination with the common symbol. The same principle would apply to all emblems of minor importance.

The question of these symbols, of which I have spoken during the last two years in my weekly courses of lectures, illustrates the most immediate of the functions to which the Positive Committee will be called. I mention it here, as a type of its general action upon European society.

Without setting any limits to the gradual increase of the Association, it is desirable that the central nucleus should always remain limited to the original number of thirty-six, with two additions, which will shortly be mentioned. Each member might institute a more numerous association in his own country, and this again might be the parent of others. Associations thus affiliated may be developed to an unlimited extent; and thus we shall be able to maintain the unity and homogeneity of the Positive Church, without impairing its coherence and vigour. As soon as Positivism has gained in every country a sufficient number of voluntary adherents to constitute the preponderating section of the community, the regeneration of society is secured.

The members assigned above for the different nations, only represent the order in which the advanced minds in each will co-operate in the movement. The order in which the great body of each nation will join it, will be, so far as we can judge from their antecedents, somewhat different. The difference is, that Italy here takes the second place, and Spain the third, while England descends to the last. The grounds for this important modification are indicated in the third edition of my 'Positive Calendar.' They will be discussed in detail in the fourth volume of this Treatise.[1]

Colonial and foreign Associates of the Committee, the action of which will ultimately extend to the whole human race.

From Europe the movement will spread ultimately to the whole race. But the first step in its progress will naturally be to the inhabitants of our colonies, who, though politically independent of Western Europe, still retain their filiation with it. Twelve colonial members may be added to the Council; four for each American Continent, two for India, two for the Dutch and Spanish possessions in the Indian Ocean.

This gives us forty-eight members. To these twelve foreign associates will gradually be added, to represent the populations whose growth has been retarded; and then the Council will have received its full complement. For every nation of the world is destined for the same ultimate conditions of social regeneration as ourselves, the only difference being that Western Europe, under the leadership of France, takes the initiative. It is of great importance not to attempt this final extension too soon, an error which would impair the precision and vigour of

[1] The relative position here assigned to England and Germany is reversed in the fourth volume of the 'Politique Positive.'

the renovating movement. At the same time it must never be forgotten that the existence of the Great Being remains incomplete until all its members are brought into harmonious cooperation. In ancient times social sympathy was restricted to the idea of Nationality; between this and the final conception of Humanity, the Middle Ages introduced the intermediate conception of Christendom or Occidentality; the real bearing of which is at present but little appreciated. It will be our first political duty to revive that conception, and place it on a firmer basis, by terminating the anarchy consequent on the extinction of Catholic Feudalism. While occupied in this task, we shall become impressed with the conviction that the union of Western Europe is but a preliminary step to the union of Humanity; an instinctive presentiment of which has existed from the infancy of our race, but which, as long as theological belief and military life were predominant, could never be carried out even in thought. The primary laws of human development which form the philosophical basis of the Positive system, apply necessarily to all climates and races whatsoever, the only difference being in the rapidity of evolution. The inferiority of other nations in this respect is not inexplicable; and it will now be compensated by a growth of greater regularity than ours, and less interrupted by shocks and oscillations. Obviously in our case systematic guidance was impossible, since it is only now that our growth is complete that we can learn the general laws common to it and to other cases. Wise and generous intervention of the West on behalf of our sister nations who are less advanced, will form a noble field for Social Art, when based on sound scientific principles. Relative without being arbitrary, zealous and yet always temperate; such should be the spirit of this intervention; and thus conducted, it will form a system of moral and political action far nobler than the proselytism of theology or the extension of military empire. The time will come when it will engross the whole attention of the Positive Council; but for the present it must remain secondary to other subjects of greater urgency.

The first to join the Western movement will necessarily be the remaining portion of the White race: which in all its branches is superior to the other two races. There are two Monotheist nations, and one Polytheist, which will be successively incorporated. Each step will facilitate the one succeeding,

and taken together, the three represent the propagation of Positivism in the East.

Russia. The vast population of the Russian empire was left outside the pale of Catholic Feudalism. By virtue of its Christianity, however, notwithstanding its entire confusion of temporal and spiritual power, it holds the first place among the Monotheistic nations of the East. Its initiation into the Western movement will be conducted by two nations of intermediate position; Greece, connected with Russia by the tie of religion; and Poland, united with her politically. Though neither of these nations is homogeneous in structure with Russia, it would cause serious delay in the propagation of Positivism should the connection be altogether terminated.

Mohammedan countries. The next step will be to Mohammedan Monotheism; first in Turkey, afterwards in Persia. Here Positivism will find points of sympathy of which Catholicism could not admit. Indeed these are already perceptible. Arab civilisation transmitted Greek science to us: and this will always secure for it an honourable place among the essential elements of the mediæval system, regarded as a preparation for Positivism.

India. Lastly, we come to the Polytheists of India: and with them the incorporation of the White race will be complete. Already we see some spontaneous tendencies in this direction. Although from exceptional causes Theocracy has been preserved in India, there exist real points of contact with Positivism; and in this respect the assistance of Persia will be of service. It is the peculiar privilege of the Positive doctrine that, taking so complete a view of human development, it is always able to appreciate the most ancient forms of social life at their true worth.

In these three stages of Positivist propagation, the Council will have elected the first half of its foreign associates; admitting successively a Greek, a Russian, an Egyptian, a Turk, a Persian, and finally, a Hindoo.

China. Japan. The Yellow race has adhered firmly to Polytheism. But it has been considerably modified in all its branches by Monotheism, either in the Christian or Mohammedan form. To some extent, therefore, it is prepared for further change; and a sufficient number of adherents may soon be obtained for Tartary, China, Japan, and Malacca to be represented in the Council.

Africa. With one last addition the organisation of the Council is complete. The Black race has yet to be included. It should

send two representatives; one from Hayti, which had the energy to shake off the iniquitous yoke of slavery, and the other from central Africa, which has never yet been subjected to European influence. European pride has looked with contempt on these African tribes, and imagines them destined to hopeless stagnation. But the very fact of their having been left to themselves renders them better disposed to receive Positivism, the first system in which their Fetichistic faith has been appreciated, as the origin from which the historical evolution of society has proceeded.

It is probable that the Council will have reached its limit of sixty members, before the spiritual interregnum in the central region of Humanity has been terminated. But even if political reconstruction were to proceed so rapidly in Europe as to render all possible assistance to this vast movement, it is hardly conceivable that the five stages of which it consists can be thoroughly effected within a period of two centuries. But however this may be, the action of the Council will become increasingly valuable, not only for its direct influence on the less advanced nations, but also and more especially, because the proofs it will furnish of the universality of the new religion will strengthen its adherents in the Western family.

Conclusion. Perfection of the Positivist ideal.

But without waiting till Positivism has been brought into this direct contact with all the preliminary phases of development, the features of the system stand out already with sufficient clearness to enable us to begin at once the work of mental and social renovation for which our revolutionary predecessors so energetically prepared the way. In their case hatred of the Past impaired their judgment of the Future. With us, on the contrary, social sympathy rests upon the historical spirit, and at the same time strengthens it. Solidarity with our contemporaries is not enough for us, unless we combine it with the sense of Continuity with former times; and while we press on toward the Future, we lean upon the Past, every phase of which our religion holds in honour. So far from the energy of our progressive movement being hampered by such feelings, it is only by doing such full justice to the Past as no system but ours can do consistently, that we can attain perfect emancipation of thought; because we are thus saved from the necessity of making the slightest actual concession to systems which we regard as obsolete. Understanding their nature and their purpose better

than the sectaries who still empirically adhere to them, we can see that each was in its time necessary as a preparatory step towards the final system, in which all their partial and imperfect services will be combined.

Comparing it especially with the last synthesis by which the Western family of nations has been directed, it is clear even from the indications given in this prefatory review, that the new synthesis is more real, more comprehensive, and more stable. All that we find to admire in the mediæval system is developed and matured in Positivism. It is the only system which can induce the intellect to accept its due position of subordination to the heart. We recognise the piety and chivalry of our ancestors, who made a noble application of the best doctrine that was possible in their time. We believe that were they living now, they would be found in our ranks. They would acknowledge the decay of their provisional phase of thought, and would see that in its present degenerate state it is only a symbol of reaction, and a source of discord.

And now that the doctrine has been shown to rest on a central principle appealing alike to instinct and to reason, we may carry our comparison a step further ; and convince all clear-seeing and honest minds that it is as superior to former systems in its influence over the emotions and the imagination, as it is from the practical and intellectual aspect. Under it life, whether private or public, becomes in a still higher sense than under Polytheism a continuous act of worship, performed under the inspiration of universal Love. All our thoughts, feelings, and actions flow spontaneously to a common centre in Humanity, our Supreme Being; a Being who is real, accessible, and sympathetic, because she is of the same nature as her worshippers, though far superior to any one of them. The very conception of Humanity is a condensation of the whole mental and social history of man. For it implies the irrevocable extinction of theology and of war; both of which are incompatible with uniformity of belief and with co-operation of all the energies of the race. The spontaneous morality of the emotions is restored to its due place; and Philosophy, Poetry, and Polity are thereby regenerated. Each is placed in its due relation to the others, and is consecrated to the study, the praise, and the service of Humanity, the most relative and the most perfectible of all beings. Science passes from the analytic to the synthetic state,

being entrusted with the high mission of founding an objective basis for man's action on the laws of the external world and of man's nature; the only basis that can control the oscillation of our opinions, the versatility of our feelings, and the instability of our purposes. Poetry assumes at last its true social function, and will henceforth be preferred to all other studies. By idealising Humanity under every aspect, it enables us to give fit expression to the gratitude we owe to her, both publicly and as individuals; and thus it becomes a source of the highest spiritual benefit.

But amidst the pleasures that spring from the study and the praise of Humanity, it must be remembered that Positivism is characterised always by reality and utility, and admits of no degeneration into asceticism or quietism. The Love by which it is inspired is no passive principle: while stimulating Reason and Imagination, it does so only to give a higher direction to the practical Energies in which the Positive spirit first arose; and from which it extended first to the sphere of thought, and ultimately to the moral sphere. The grand object of human existence is the constant improvement of the natural Order that surrounds us: of our material condition first; subsequently of our physical, intellectual, and moral nature. And the highest of these objects is moral progress, whether in the individual, in the family, or in society. It is on this that human happiness, whether in private or public life, principally depends. Political art, then, when subordinated to morality, becomes the most essential of all arts, consisting in concentration of all human effort upon the service of Humanity, in accordance with the natural laws which regulate her existence.

The great merit of ancient systems of polity, of the Roman system especially, was that precedence was always given to public interests; every citizen co-operating in the manner and degree that was possible in times when no right ordering of domestic life had been effected. In the Middle Ages, when Catholicism attempted to form a complete system of morality, private life was made the principal object. All our affections were subjected to a most beneficial course of discipline, in which the inmost springs of vice and virtue were reached. But owing to the inadequacy of the doctrines on which the system rested, the solution of the problem was incoherent. The method by which Catholicism controlled the selfish propensities was

one which turned men away from public life, and concentrated them on interests which were at once chimerical and personal. The immediate value of this great effort was, that it brought about for the first time a separation between moral and political power, which in the systems of antiquity had always been confounded. But the separation was due rather to the force of circumstances than to any conscious efforts, and it could not be fully carried out, because it was incompatible with the spirit of the Catholic doctrine and with the military character of society. Women sympathised with Catholicism, but the people never supported it with enthusiasm, and it soon sank under the encroachments of the temporal power and the degeneracy of the priesthood.

Positivism is the only system which can renew this premature effort and bring it to a satisfactory issue. Combining the spirit of antiquity with that of Catholic Feudalism, it aims at carrying out the political programme put forward by the Convention.

Positive religion brings before us in a definite shape the noblest of human problems, the permanent preponderance of Social feeling over Self-love. As far as the exceeding imperfection of our nature enables us to solve it, it will be solved by calling our home affections into continuous action; affections which stand half way between self-love and universal sympathy. In order to consolidate and develop this solution, Positivism lays down the philosophical and social principle of separation of theoretical from practical power. Theoretical power is consultative; it directs education, and supplies general principles. Practical power directs action by special and imperative rules. All the elements of society that are excluded from political government become guarantees for the preservation of this arrangement. The priests of Humanity, who are the systematic organs of the moderating power, will always find themselves supported, in their attempts to modify the governing power, by women and by the people. But to be so supported, they must be men who, in addition to the intellectual power necessary for their mission, have the moral qualities which are yet more necessary; who combine, that is, the tenderness of women with the energy of the people. The first guarantee for the possession of such qualities is the sacrifice of political authority and even of wealth. Then we may at last hope to see the new

religion taking the place of the old, because it will fulfil in a more perfect way the mental and social purposes for which the old religion existed. Monotheism will lapse like Polytheism and Fetichism into the domain of history; and will like them, be incorporated into the system of universal commemoration, in which Humanity will render due homage to all her predecessors.

Corruption of Monotheism.

It is not then merely on the ground of speculative truth that Positivists would urge all those who are still halting between two opinions, to choose between the absolute and the relative, between the fruitless search for Causes and the solid study of Laws, between submission to arbitrary Wills and submission to demonstrable Necessities. It is for Feeling still more than for Reason to make the decision; for upon it depends the establishment of a higher form of social life.

Monotheism in Western Europe is now as obsolete and as injurious as Polytheism was fifteen centuries ago. The discipline in which its moral value principally consisted has long since decayed; and consequently the sole effect of its doctrine, which has been so extravagantly praised, is to degrade the affections by unlimited desires, and to weaken the character by servile terrors. It supplied no field for the Imagination, and forced it back upon Polytheism and Fetichism, which under Theology form the only possible foundation for poetry. The pursuits of practical life were never sincerely promoted by it, and they advanced only by evading or resisting its influence. The noblest of all practical pursuits, that of social regeneration, is at the present time in direct opposition to it. For by its vague notion of Providence, it prevents men from forming a true conception of Law, a conception necessary for true prevision on which all wise intervention must be based.

Sincere believers in Christianity will soon cease to interfere with the management of a world where they profess themselves to be pilgrims and strangers. The new Supreme Being is no less jealous than the old, and will not accept the servants of two masters. But the truth is, that the more zealous theological partisans, whether royalists, aristocrats, or democrats, have now for a long time been insincere. God to them is but the nominal chief of a hypocritical conspiracy, a conspiracy which is even more contemptible than it is odious. Their object is to keep the people from all great social improvements by assuring them

that they will find compensation for their miseries in an imaginary future life. The doctrine is already falling into discredit among the working classes everywhere throughout the West, especially in Paris. All theological tendencies, whether Catholic, Protestant, or Deist, really serve to prolong and aggravate our moral anarchy, because they hinder the diffusion of that social sympathy and breadth of view, without which we can never attain fixity of principle and regularity of life. Every subversive scheme now afloat has either originated in Monotheism or has received its sanction. Even Catholicism has lost its power of controlling revolutionary extravagance in some of its own most distinguished members.

It is for the sake of Order therefore, even more than of Progress, that we call on all those who desire to rise above their present disastrous state of oscillation in feeling and opinion, to make a distinct choice between Positivism and Theology. For there are now but two camps: the camp of reaction and anarchy, which acknowledges more or less distinctly the direction of God: the camp of construction and progress, which is wholly devoted to Humanity.

The Being upon whom all our thoughts are concentrated is one whose existence is undoubted. We recognise that existence not in the Present only, but in the Past, and even in the Future: and we find it always subject to one fundamental Law, by which we are enabled to conceive of it as a whole. Placing our highest happiness in universal Love, we live, as far as it is possible, for others; and this in public life as well as in private; for the two are closely linked together in our religion; a religion clothed in all the beauty of Art, and yet never inconsistent with Science. After having thus exercised our powers to the full, and having given a charm and sacredness to our temporary life, we shall at last be for ever incorporated into the Supreme Being, of whose life all noble natures are necessarily partakers. It is only through the worship of Humanity that we can feel the inward reality and inexpressible sweetness of this incorporation. It is unknown to those who being still involved in theological belief, have not been able to form a clear conception of the Future, and have never experienced the feeling of pure self-sacrifice.

INTRODUCTORY PRINCIPLES,

SCIENTIFIC AND LOGICAL.

CHAPTER I.

GENERAL INDICATION OF THESE PRINCIPLES.

In the foregoing general review, I have shown that the advanced portion of our race has now completed its preparatory training; and that being in the possession of the philosophic principles upon which its permanent social system is to be founded, it should proceed without delay to the task of construction. The utter decay of all theological and military institutions facilitates, and indeed enforces, the establishment of that state of peaceful enlightenment by which alone the wants of human nature can be fully satisfied, and which all previous phases of development have approached more and more nearly. An inevitable crisis in the condition of Western Europe has subjected it for the last two generations to a series of oscillations between anarchy and retrogression; both equally connected henceforth with theological principles: and the only issue of this crisis lies in the substitution of the permanent government of Humanity for the provisional government of God.

PREFATORY REMARKS, pp. 325–330.

Positivism a co-ordination of the three aspects of human nature.

Social reconstruction as here viewed, involves the perfect co-ordination of the three essential modes of human existence, collectively or individually regarded; that is to say, of speculative life, active life, and affective life. Under the primitive systems of theocracy they were united harmoniously; but that unity, becoming soon oppressive, long ago ceased, and has never yet been restored. Each of these modes in turn, during the three great epochs of European history, has been cultivated to the exclusion of the rest; a process which however necessary for the attainment of their full growth, was fatal to their mutual harmony. The period of preparatory training is now past, and the time has arrived for the foundation of a complete and final synthesis, in which a wider sphere will be given for the simultaneous action of Intellect, Energy, and Feeling, than each

could separately find either in Greek civilisation, Roman citizenship, or Catholic-feudal discipline. In such a synthesis, while recognising with the Romans the supremacy of action over speculation, we should incorporate the mediæval tendency to subordinate both to affection, the only true source of human unity.

Worship and Discipline must rest on Doctrine.

All these essential conditions are alike satisfied by the Demonstrated Religion which is now about to replace Revealed Religion; as Revelation, fifteen centuries ago, superseded Inspiration. In this final religion, as in that of primitive times, and in the transitory religion which followed, there are three distinct, though mutually-related elements: the Doctrine, the Life, the Worship. They relate respectively to the three primary classes of human attributes: thoughts, acts, and feelings. They correspond, therefore, to the three great results of man's constructive efforts, Philosophy, Polity, and Poetry.

Yet, connected as these elements are, the work of systematising them cannot be effected simultaneously. Whether the object be union or discipline, religion involves the entire subordination of human existence to an external power. We must therefore understand the nature of this power before we can define the course of action which it prescribes, or the feelings of reverence with which it is to be regarded. Thus religious life presupposes religious doctrine; and as the result of both, there follows religious worship, strengthening faith and duty by maintaining their constant relation to the supreme element of our nature, affection. This has always been the natural course, even when the objects of worship were beings of a purely fictitious kind, originating in spontaneous efforts of Imagination. *A fortiori*, it will be the course followed in the final religion, where the object venerated is one of unquestioned reality, but which, from the complexity of its nature it was for a long time impossible to grasp. As then Theocracy and Theolatry depended upon Theology, so Sociology is necessary as the systematic basis of Sociocracy and Sociolatry.[1]

[1] At one time I regretted the hybrid character of these three indispensable terms; although the inadequacy of any purely Greek root for the purpose is a sufficient excuse for it. But there is a compensation, as I reflected afterwards, for this etymological defect, in the fact that it recalls the two historical sources—the one intellectual, the other social—from which modern civilisation has sprung. There are other scientific terms equally hybrid, which it has been found necessary

This Treatise, though chiefly doctrinal (sociology), will also touch on discipline (sociocracy) and worship (sociolatry).

But the elaboration of religious Doctrine, although it is the first point with which our attention must be occupied, will be insufficiently effected until we have derived from it some distinct conception of the Life, and also of the Worship, with which it is associated. As the final object of all conceptions which have any real value is to regulate our conduct and our feelings, their capacity for doing so is always the best proof that their development is mature. Until this is the case, the mind still remains in the philosophical or scientific stage, by which especially in modern times the true religious state is prepared and preceded. This treatise therefore will often touch on Sociocracy, and even on Sociolatry, although its principal object will always be Sociology properly so called. The ripeness of the Doctrine for practical application has been clearly shown in the preceding Review, and it will be exhibited at greater detail in the concluding volume. When the co-ordination of Positive Doctrine is complete, and the foundation of the religion of Humanity has been laid, religious Life and Worship will in turn become the principal object of meditation; and thus we may be led incidentally to fresh sociological discoveries. But at present they can only be referred to as the test by which our conceptions of religious doctrine should be judged.

These spontaneous relations of Doctrine with Life and Worship are of great importance in the synthesis which we are now undertaking; not merely because they keep its practical object constantly before us, but also through the strong stimulus which our intellectual powers receive from being constantly recalled to the consciousness of their moral and social influence. The procedure here indicated is in the highest degree rational. It evidently accords with the synthetical spirit which belongs to every religion, and which should more especially characterise the final religion, since its very object is to establish a more complete and homogeneous relation between the various modes of human existence. It is in the present day peculiarly important to bring this relation prominently forward on every

to use, as, *e.g.*, mineralogy; so that when, as in the present case, the hybridism is connected with an important philosophical meaning, there is still less reason for rejecting it. The word Sociology has already been adopted by all Western thinkers from my Positive Philosophy. It may be hoped that the words Sociolatry and Sociocracy will soon become current also. The reasons for their employment are at least as urgent; and they were readily accepted by the large audience who attended my course of philosophic lectures on the general history of Humanity.

suitable occasion, that we may emancipate ourselves as far as possible from the dispersive spirit which at present vitiates our efforts. The revolt of the intellect against the heart which has lasted through the whole course of modern history, has, it is true, been recently terminated, in principle at least, by the foundation of social science. But it has left deep traces everywhere, which can only be eradicated by sufficient practical experience of the normal state. Positivists then should endeavour as far as possible to develop not merely the influence of Intellect on Character, but what is less understood and yet equally important, the influence of Feeling in stimulating, and even in inspiring Intellect. In the Middle Ages, in spite of the imperfection of their creed, this reaction was a sacred truth, generally recognised. And it is still more applicable to the Religion of Demonstration, in which the field formerly occupied by supernatural grace is subjected, as in the case of all other phenomena, to definite laws; laws which to the true philosopher are the principal subject of meditation.

Reaction of Feeling on Thought favoured by pressure of social needs.

Urgent as these considerations are on their own account, they receive additional force from the present political condition of Western Europe. The Positive system, substituting comprehensiveness of thought for the spirit of detail, comes before us at a time when social considerations of the highest kind are powerfully engrossing our attention. I have already pointed out the influence of political causes in preparing the way for, and even in the formation of Positive Philosophy. And now that this Philosophy, originating in science, is rising to the higher rank of a religion, there is still more room for such influences to guide its progress, and thus to indicate spontaneously the subordination of the intellectual to the social point of view. The intervention of moral and political interests is of the greatest importance in preserving the new synthesis from the idle digressions and self-satisfied apathy to which our speculative faculties, when left to themselves, are so prone, especially in times of anarchy. If Positivism is to surmount the formidable opposition that is now being brought to bear against it, it must be by the combined assistance of the working classes and of women. Now the condition on which alone it can receive and retain their support is that it shall never lose sight of that high social mission, which in the eyes of all but the purely speculative class constitutes the whole of its real value.

Such, then, is the systematic form which all true thinkers of the West, stimulated by the urgent necessities of the time, will ultimately give to Positive Logic. In their attempts gradually to solve the great problems of life, they will combine all the instruments of thought which have been sanctioned in the past history of man. During the three successive phases of our collective infancy, Fetichism, Polytheism, and Monotheism have shown the value respectively of feelings, of images, and of natural or artificial signs in the treatment of such abstract and general questions as have presented themselves. But each of these instruments has been employed too exclusively; and thus each can only be regarded as a spontaneous preparation for the normal state of human reason. Since the close of the Middle Ages the pride of metaphysical or scientific speculation has indeed restricted the use of the term Logic to the last of these instruments, that is, to the use of signs; these being the most available for Deduction, although of far less utility for Induction, and moreover far less adapted for popular use. But this separation between the Logic of women and working men, the Logic of poets, and the Logic of philosophers and men of science, has no real basis. In the final religion all approved agencies for the investigation of the external order which man possesses will be brought into permanent and combined action. Deep study of man and of Humanity warrants then the recognition, as a logical instrument, of Feeling, on which the first spontaneous efforts of our nascent intellectual powers were based. The universal consensus by which the social organism is characterised, has led many writers, in the materialistic spirit which still exercises such influence over Western thought, to enlarge on the effects of wholesome bodily exercise as a stimulus to thought. But such writers almost invariably ignore the far greater efficiency in this respect of good moral impulses. In the Middle Ages this was universally recognised; since that time none but the mystics have duly appreciated it. Yet the mental influence of the various cerebral organs on one another ought surely to be more direct and powerful than that of organs comparatively disconnected. Therefore the religion of demonstration, in which the general aspects of human existence are always kept in view, will insist even more strongly than was done in the Middle Ages, on the intellectual value of affection, while at the

Legitimacy of Logic of Feeling.

same time encouraging largely the reaction of affection upon intellect. Both tendencies follow naturally, and to an increasing extent, from the subjection of social phenomena to true laws; and this at a time when urgent political necessities are forcing the attention of all upon the most important and difficult problems of life.

The above considerations seem at first sight to relate more particularly to the subject of Sociology properly so called, and to have little reference to the introductory principles which we are at present endeavouring to systematise. But on closer examination we shall find that it is precisely for this introductory portion of my treatise that the new conception of Logic here presented is most indispensable. In the final science of sociology the reaction of Feeling upon Thought is indicated by the very nature of the subject; there is the less occasion therefore for specially insisting upon it. But it is otherwise with the preliminary sciences which, being engaged with more abstract and less elevated subjects, seem less amenable to moral influences. Yet it is with these that such influences are more peculiarly necessary, especially at the present day; because thinkers are so prone to misapprehend or ignore their true character and the purpose which they are intended to serve. The basis on which their systematisation as here indicated rests, is in reality the subordination of intellect to the service of social interests, from which it has been to so great an extent severed during the period of irreligion which has elapsed since the Middle Ages. This, then, is the proper occasion for urging, in the name of the demonstrated religion here set forth, the substitution of the convergent for the divergent system of thought. In this great logical principle we have at once a decisive instance of the normal reaction of Feeling upon Intellect.

Divisions of this chapter.

With these general remarks, which it was indispensable to premise, we may proceed at once to the immediate object of this chapter. In explaining the present introduction to Sociology, we may consider first the purpose which it is intended to serve; secondly its speculative character; and lastly the method to be followed in it.

I. PURPOSE AIMED AT IN THIS INTRODUCTION, pp. 331–343.

The necessity of such an introduction is peculiar to the final religion. Primitive religions were necessarily of too spontaneous a character to require it. We shall better under-

stand its necessity, and therefore the purpose to be served by it, if we look at the chief points of difference between the new Supreme Being and the old.

Contradictions in conception of God due to his absolute independence.

The old was always simple and absolute, especially when Monotheism became the established belief. The new Supreme Being on the contrary, is from its nature relative and composite. Hence it follows necessarily that the first is omnipotent, the second essentially dependent; and to this again is due the fact that the first religious system is provisional, the second permanent.

For in truth the supposition of absolute autocracy rendered the conception of God utterly self-contradictory, and therefore certain to decay. Thoughtful men could not but see the impossibility of reconciling omnipotence either with unlimited intelligence or with infinite goodness. Man's reflective powers begin where observation ends; their purpose is to supply the deficiency of observation. If we were always able to place ourselves in the circumstances best adapted for investigation, we should not require the faculty of reason, since we should discover everything by mere inspection. Therefore omnipotence is inconsistent with the notion of infinite wisdom. Its incompatibility with perfect benevolence is still more direct and evident. All man's designs, and consequently all his feelings, have reference to certain fundamental obstacles, some of which he has to modify, to others to resign and adapt himself. The volitions of a being who was really all-powerful could then be nothing but mere caprices, not admitting of wisdom in the true sense of the word, since wisdom implies a necessity in the world without us compelling us to adapt means to ends.

Under Polytheism, which in every respect is the most important of the three theological stages, these radical inconsistencies remained in the background, and were for a long time checked. But with the establishment of Monotheism they began at once to perplex all vigorous minds. The impossibility of evading them would have speedily brought so untenable a doctrine into discredit had not men's thoughts been for the most part justly preoccupied with its moral and social applications. On the other hand these very applications placed the utter incoherence of the doctrine in a stronger light. For the divine type, which was being narrowed down, as we have seen, by the force of logic to the single attribute of omnipotence, ceased to

be an adequate representative of the human type, in which the combination of Activity with Feeling and Reason is so clearly marked. Consequently the moment that enquiry became possible, doubts arose which it was impossible to overcome. And Monotheism was the less able to suppress them, that in its origin, while combating Polytheism, it had invoked and sanctioned the employment of reasoning in religious questions, a process which, when its own turn came, it was still less able to withstand.

In the dependence of the new Supreme Being on the external order lies its moral and social superiority.

In this respect the new religion contrasts strongly with the old. The very fact with which it is reproached, the dependence of its object upon external conditions, is in reality its claim to preference. We may be sure that its duration will equal that of the Being towards whom it is directed. In speaking of Humanity as supreme, we use the word only in reference to human powers and wants. It is quite conceivable that even within the limits of the Solar System there may exist an organism of still higher powers. Of this however we can know nothing; and besides such a speculation, even if within our reach, would be wholly useless, since such a being could have no connection with ourselves. Of the conceptions within our range many are of no real utility to us; whereas we are certain sooner or later to become aware of every important influence that acts upon us, the very fact of such action being itself a starting-point for our investigation. Dismissing then as useless the comparison between all the Great Beings whose existence is possible, it is enough for us to be sure that our own is superior to every existence within the compass of our knowledge. Conscious that our individual life must ever be subordinate to the life of Humanity, we regard Humanity as the ultimate object of all our efforts.

And now we may see the truth of the assertion that limitation of power constitutes the superiority which the kingdom of Humanity possesses, especially in moral and social aspects, over the kingdom of God.

That the new Supreme Being is homogeneous with the beings subjected to it is at once obvious from its very structure. But such homogeneity, one of the first conditions of efficacy, was hardly possible for Theology; except by humanising its types, which was done even under Monotheism. As to the second condition, that of preponderating power, the very proudest minds

can hardly fail to recognise it. When we reflect how dependent every part of our life, physical or moral, is upon time and place, each one of us feels the irresistible power of the true Great Being; a power which his own personal effort can only modify within very slender limits. But the influence of Humanity is dependent on something besides superiority of magnitude and duration. For Humanity is not composed of all individuals or groups of men, past, present, and future, taken indiscriminately. There can be no true whole unless the elements composing it are in a true sense assimilable. Therefore the new Great Being is formed by the co-operation, whether in time or space, only of such existences as are of a kindred nature with itself; excluding such as have proved merely a burden to the human race. It is on this ground that we regard Humanity as composed essentially of the Dead; these alone being fully amenable to our judgment; not to speak of their increasing superiority in number. If the living are admitted it is, except in rare instances, only provisionally. The present life is a period of probation, which after it is over results either in exclusion or in permanent subjective incorporation into the life of Humanity. Consequently all elements truly belonging to Humanity are of necessity deserving of honour. Further, it is only by their nobler aspects that they can be considered as incorporated. The imperfections which, during their first life, stimulated them to discordance, will form no part of their memory. These attributes will be brought prominently forward in the Poetry of the Future; and the superiority of the new Great Being to her worshippers in love and intellect will be as manifest as it already is in power. Thus in the supreme object of Positive Religion we find realised that combination of homogeneity of nature with preponderating power, which Catholicism strove ineffectually to attain by its fictitious ideal of Christ.

We have now to explain the nature of this dependence upon external conditions, with which the religious efficacy of the new Supreme Being is so intimately connected. Here the necessity of these introductory principles in a systematic treatise on Sociology will at once become apparent.

The structure and the evolution of Humanity are subject to certain special laws which form the doctrinal basis of the final religion. These laws, which are not in any way susceptible of being reduced to others, are the most special and the most

complicated of the whole series of natural laws. It is the direct purpose of this Treatise to study these laws; and the second and third volumes are devoted to their statical and dynamical aspects. But before proceeding to their investigation, a systematic series of preliminary conceptions is necessary to give it scientific and logical coherence. Sociology cannot exist, as Theology did at first, as an isolated and original system of thought, disconnected from the rest of our knowledge. Alike in the methodic exposition as in the first formation of the science, it must be preceded and prepared by a general view of the laws which regulate the more general and less complicated phenomena.

For, besides the laws peculiar to her own nature, Humanity is subjected also to those which govern all other beings, whether organic or inorganic. By the very fact of being real and not fictitious, her existence is in the highest possible degree relative. Like every other organism, only to an increased extent, she is invariably subordinate to two kinds of conditions; the conditions which relate to her environment, and those which regulate the elements of which she is formed. True, knowledge of the agent and of his surrounding conditions, will never be sufficient without direct study of the development of Humanity; but they form the indispensable basis of that study, and indeed they contain in a systematic form the germs of it.

Between these two classes of preliminary conditions there exists necessarily a harmony, of which we shall speak more particularly in the third part of this chapter, when dealing with the classification of the Sciences. At present we are regarding Science as a whole, with the view of showing the religious value inherent in it, by which studies at present pursued without any direct moral purpose, will ultimately be ennobled.

Importance of this order (*a*) individually; (*b*) socially.

It would be needless to demonstrate the obvious fact of the dependence of the Great Being upon material conditions: conditions which form the starting point of its continuous activity. What we have now to examine is a subject of higher import, and far less understood; the influence which this dependence exercises upon the higher functions of Humanity; upon the intellectual functions which guide her progress, and the social functions which maintain her existence. We shall find how close is the bearing of these preliminary truths upon religion under its two aspects, discipline and union.

So lately as the beginning of this century, the greatest of biologists, Bichat, had formed the utterly false notion that the relation of living bodies to their environments, whether special or general, was one of antagonism. It was soon perceived that the contrary of this was true: that harmony between the organism and the environment was a fundamental condition of life; the most philosophic definition of life being that it is a continuous and close adjustment of internal spontaneity with external fatality. The conception, however, of this great harmony, and its bearing upon the whole course of positive speculation, is as yet extremely inadequate.

(*a*) It is an essential constituent of Life in every phase, whether material or moral.

It has been felt more or less clearly that in mental as in material life dependence on the external world was a means of growth and a stimulus to our intellectual and active faculties. But it has a more direct and more important action on our higher moral functions which has never been sufficiently recognised. Without it the course of human passions would be hopelessly disordered.

The subjection of all phenomena of whatever kind to invariable laws is the very basis of our whole existence. But for this constancy in all natural relations, it would be impossible to conceive of any coherency in our thoughts, any definite purpose in our actions, any fixity in our desires. Even Imagination is unable to emancipate itself from these limitations; they form always the background of its wildest creations. How indispensable to our being is this External Order is evident if we recall the confusion and terror caused by its apparent suspension or alteration, in the case of objects possessing the slightest interest for us. It is by this Fatality that our whole life, individual or collective, is moulded. When it is inflexible we adapt ourselves to it: when it is modifiable we endeavour to ameliorate it. It might be thought that only our active faculties are affected by it; but our intellectual powers are equally involved: since their principal function is to render our subjection or our modification more complete. In the normal state of man, the sphere of speculation is the same as that of action; the object of speculation being to prepare for or to criticise action by the standard of the universal order of which itself alone can take cognisance.

In its first spontaneous rudiments, then, this fundamental doctrine of Positivism is of still more ancient date than the

It has been partly recog-

nised from the earliest ages.

principle of theology; and this in every class of phenomena, even in those relating to Man. Always and in all of them men recognised, however partially, certain natural relations over which the divine will had no control. But for this empirical basis, our practical life would have been wholly devoid of coherence. It is to be remarked moreover that men's earliest observations were directed to moral rather than to physical laws, the influence of the former being more familiar and immediate. There was a time when certain men were supposed to be gifted with the power of directing the courses of the planets almost at their own pleasure; but no one ever attributed to them similar power over human passions. It is this unchanged fixity of character which has always been the source of the interest inspired by great poems; for the fictitious element in them, however extravagant, has always been confined to their material conditions. In fact the very tendency in which theological philosophy originated, was that of explaining physical phenomena by moral laws; the course of practical life having revealed these latter to us empirically. The development of Positive speculation is precisely the inverse of this. But Positive speculation was impossible till a far later period, when practical necessities led men to systematise their observations, in order to gain the power of prevision. Now that this method has been applied to the highest phenomena, the constancy of natural relations stands before us as a universal doctrine which directly or indirectly embraces every subject of Positive speculation in the central conception of Humanity. It is only from this point of view that its capacity for regulating human life can have free scope.

Positivism represents it more completely than theology.

It has always been felt that to control the fluctuation of our desires, the wandering of our thoughts, and the inconstancy of our purposes, some fixed point was necessary; and that it must be sought for outside ourselves. It has been the principal and avowed object of Theology to fulfil this fundamental condition; but it has been very imperfectly effected. For the basis of its absolute synthesis was in reality only subjective, although believed to be objective. The conception of an external power, having no real foundation, was moulded on the internal variations of the human mind, individual or collective. As a means of discipline it failed in its most important purpose; and consequently almost always alternated between servility and presump-

tion. The Positive doctrine, on the contrary, secures the true dignity of Man, by combining noble resignation with wise activity, which is never allowed to be arbitrary. Regarding each separate life in its relation to Humanity, it represents Humanity herself as subordinate to a universal Order, which has an evident objective existence, and which by its necessary preponderance forms the principal instrument in controlling human life.

In this general view of the discipline imposed by the preliminary sciences upon our intellectual powers, I have referred rather to the doctrines of these sciences than to their method. The method is, however, of even greater importance as an intellectual training than the doctrine. But this has been so thoroughly explained in my Positive Philosophy that I need not do more than mention it here; the less so, that the two following chapters of this Introduction will be devoted to its consideration. It is especially in the gradual formation of the Positive Method that the intellectual development of the last three centuries has assisted human progress, and prepared the way for the Religion of Demonstration. And scientific training will always continue to be necessary for those who desire real solidity of convictions. It can never be secured even by the best minds, when they begin at once with the higher studies without sufficient practice of the less complicated and more general sciences. Thinkers of great power, but without this training, have taken such an exaggerated view of the influence of passion on the intellect, as to imagine that self-interest could force men to reject the simplest mathematical demonstrations. Such a heresy is an expressive way of describing the state of almost indefinite fluctuation characteristic of the modern understanding when uninstructed in Positive knowledge.

(*b*) This order is a bond of union.

Without dwelling further upon a principle which no one now disputes, I proceed now to the second aspect, in which the religious efficacy of these preliminary sciences is manifested: their influence upon our Social life. I have shown the controlling action of Science upon the life of the individual. I have now to explain its tendency to unite individuals together. Under the first aspect we have seen its utility in guiding the progress of Humanity; but under the second its character is still more sacred, since it helps to originate and maintain her existence.

The new Supreme Being is by its nature composite, and therefore needs constant effort to preserve its separable elements in a state of union. Such effort is the more necessary because the very first condition of the supreme power exercised by Humanity being the independence of its organs, these organs have a constant tendency to separation. Consequently the fundamental principle by virtue of which Humanity exists, is Love. For this direct and universal tie nothing can be substituted. But its influence is powerfully aided by the sense of a common Fatality in the world without and in that of our own nature: and in the demonstration of this Fatality the religious value of Science consists.

It establishes 1. Community of conviction.

In the first place scientific conviction binds men together by the mere fact of controlling their actions. The problem of reconciling men together is not in reality more difficult than that of harmonising the successive phases of each individual. The fixity of principle which results from the sense of dependence on an External Order necessarily leads to community of opinion, by at once engaging all minds in similar subjects of thought. Moreover, a common object of exertion is held up to all, that of moulding ourselves to this universal Fatality, or of modifying it. But beyond the convergence of thought and of action, which the conception of this Order produces, it has a still more direct action upon the Heart. It assists the social sympathies in their struggle against the personal propensities. It is this more sacred and less apparent influence that we are now to consider.

2. Community of action.

3. Discipline of pride.

Its principal effect upon the character is that it disciplines Pride; an instinct which from the impossibility of satisfying it, divides men even more than self-interest. The habit of submission is the first condition of order in human affairs. For this habit the sense of an irresistible Fatality offers the only adequate training. And it is the more effectual that it influences not merely our energies but our intellect, which is far less amenable to control. The most self-complacent metaphysician has always admitted the necessity of subordinating his reason to mathematical and astronomical truths, even whilst denying the existence of any invariable law in moral phenomena. As soon as the development of Positive thought has proceeded far enough to bring this involuntary submission into due prominence, it creates a spirit of true humility, and

thus becomes consciously to ourselves a most valuable agent of moral discipline. Our reason, naturally so proud, will then have no higher aim than to become a faithful mirror of the world without us, so as to dispense by its own internal workings with the necessity for external observation; for this is what is done by scientific prevision, a power which deserves our highest admiration. This combination of submission with power is one of our noblest achievements, and is at the same time a most effective agent in our moral training. Aided by the instinct of vanity, it has sometimes saved scientific men of the most servile character from a course of degradation which shocked nothing but their intelligence.

4. Sympathy.

Further, the fatalities of the world and of human nature help to bring men together by reminding them that all are involved in the same miseries, and therefore stand alike in need of mutual help. Our common liability to the worst evils of life will always tend to mitigate the bitterness aroused by social inequalities, which, indeed, are themselves but a part of the same destiny. But it unites us still more strongly by the fact that being in part modifiable, it supplies a constant object for our collective or individual exertion. Thus universal Love stands out at once as the best resource for lightening the evils of life, even before men arrive at a clear consciousness that of itself it is the purest and most direct source of happiness.

Brief as the foregoing explanation has been, it will suffice as a preliminary view of a subject so intimately connected with the whole subject-matter of this Treatise. It has been shown that Science, properly so-called, whether organic or inorganic, besides being indispensable as the systematic foundation of Sociology, has of itself a deep religious value as a source of union and a means of control. The irreligious tendencies which it has hitherto called forth, and which were necessary for the first acquisition of mental freedom, are alien to the true nature of Science, the main object of which is to bind together, by demonstrating analogy or sequence. Science will always remain essential as an introduction to the final religion; and its place in the Sociocracy of the Future will be more honourable and permanent than that which incidentally was accorded to it in the ancient theocracies.

Social mission of science the sole

It is the consideration of this high mission which alone enables us to form a rational systematisation of the preliminary

means of co-ordinating it.

sciences. They precede and prepare the way for Sociology: but Sociology alone can co-ordinate them. The deplorable manner in which they are at present studied, shows but too clearly the need of some controlling power adequate to replace the discipline once exercised by theologico-metaphysical doctrine. For want of such a guiding principle, our scientific men have become incapable, even when sincerely desirous to do so, of explaining or of understanding the theories of their own science; having no general conceptions by which to colligate them.

Biology, for instance, looked at as an isolated system, admits of no rational or definite treatment. Starting from the incontestable principle of the general consensus of the organism, it proposes to examine the physical functions of man irrespectively of the moral functions, which can only be studied in the collective development of Humanity. This separation is permissible only on the understanding that they are afterwards studied in combination. It is merely preliminary to the normal state of the understanding, in which all Positive studies are viewed as an inseparable whole.

Inorganic Science might seem to admit of being co-ordinated into a special system irrespective of Sociology; since the phenomena which it investigates may be treated without reference to man, except as their spectator. But apart from the blame which on social grounds will attach henceforth to this Utopia of mathematicians, its value intellectually is of the most superficial kind. For the domain of research being unbounded, would, if independently treated, encourage unlimited digressions, such as not only would be utterly barren, but would render all systematisation hopeless. Objective unity in this field is impossible, as the fruitless endeavours of the last two centuries have shown. It admits by its very nature of none but subjective unity: that is to say, of unity produced by the predominance of the human or social point of view. This is the only universal connection between the doctrines, and even between the methods of physical science; and by means of it the treatment of each subject, however exhaustless, can be restricted to what is really required for the sacred purpose of devoting all our efforts to the continuous service of Humanity.

Apart from such considerations,

But the restriction of the preliminary sciences here laid down, and which is involved in considering them merely as a

necessary introduction to the final science, is of even greater importance to Feeling than it is to Reason and to the Active faculties. The charge of immorality so often brought in modern times against scientific study, illogically as it may be expressed, contains, and always will contain, an element of truth.

scientific study irrational and immoral.

I have already spoken in my General View of the materialistic tendencies necessarily involved in the pursuit of the lower sciences when uncontrolled by the authority of the higher. Following this thought still further, we shall find that all intellectual culture, however systematic, has a tendency to vitiate character, not only by inducing hardness of feeling, but by developing pride. The great personal efforts which it requires arouse an exaggerated sense of individuality, which effaces and perverts our conception of the universal connection of the whole human race: a connection as unquestionable in this aspect as in every other. Everywhere it is the Great Being who in reality produces, although its organs must always be individual. In practical life we are far less apt to forget this connection; constant co-operation being here of immediate necessity. In this department metaphysical self-sufficiency has never ventured upon its absurd fiction of universal construction by the unaided efforts of an individual. But intellectual life is always liable to these mischievous and anti-social illusions of pride; and it can only be preserved from them by the constant control of religion, guiding it ever back to its high purpose.

Difficult as the introduction of such principles in the present day may seem, it is assuredly not impracticable. We must not carry our censure of modern intellect so far as to imagine it permanently disqualified from accepting the just supremacy of the heart. Its state of insurrection has been for a long time justified by the inevitable necessity of breaking through a most oppressive bondage. Morally that insurrection has been disastrous; yet in the nobler types of scientific eminence it has always evoked an obscure consciousness of the social and philosophic construction which would be the ultimate justification of their partial and preparatory efforts. A clear proof that the modern spirit is really tending in the direction of wise religious discipline, is the way in which the final religion has arisen. For, as I showed clearly in my System of Positive Philosophy, Positivism originated in intellectual considerations, although now it has established direct and con-

The subjection of Science to this moral discipline not chimerical.

tinuous relations with Feeling. Strong therefore as is the pride of science, it has yet yielded to the urgency of social considerations, and permitted the Intellect to rise above its condition of utter anarchy, and voluntarily to restore the Heart to its normal position of preponderance. The only discipline to which modern thought is radically opposed is that of retrograde principles. It invites such discipline as will ennoble its position and secure its progress by concentrating it upon high moral and political problems, from which, for want of sound principles, it has hitherto been debarred. As for those minds of an inferior stamp who cling to anarchy because it favours their self-importance, the new religion will soon counteract and suppress their influence, hostile as it is to the best interests of society. Such minds are reduced in the present position of affairs to one of two alternatives; either they must concede the principle of the preponderance of the Heart over the Intellect; or they must confess that the systematic demonstration of that principle is too difficult for them to follow. The stringency of this alternative was instinctively appreciated by the Convention when they took the bold and wise step of suppressing the Academies. Clear exposition of the principle is not likely to make its application less rigorous.

Whether we look then at the more systematic requirements of the Future, or at the empirical necessities of the past, we are alike led to the conclusion that the preparatory sciences, organic or inorganic, are to be viewed as directly or indirectly introductory to the one final science of Humanity. These preliminary studies have in themselves, moreover, a high religious value; as serving to regulate and to maintain the existence of the Supreme Being. It is in one or other of these two aspects that they are henceforth to be regarded, with the exception of course of their various applications to the corresponding arts. Submission to such salutary discipline and consecration to so high a purpose cannot fail to imbue them with sympathetic feeling; in such a way that the austerest meditations may be transformed into acts of love. Love, and action under the influence of love, will be the dominant feature of human life in the small minority of true philosophers, as in every other class. It is their especial privilege that not action merely, but thought is regulated by love; because the nature of their high calling brings them into direct contact with the highest func-

tions of the Great Being. It might seem that thought would be restricted by such discipline as this; its real purpose is to enlarge the principal field of thought by preserving it from the useless digressions to which it is so prone. These often culpable abuses of the scientific spirit taking the means for the end, will be strictly repressed on grounds of public and even of personal morality, as wasting for purposes of puerile vanity forces which it is of the greatest importance to economise. And there will be the less scruple in the exercise of this wholesome control, that popular instinct, when guided by religion, will feel that underneath this pretended zeal for the discovery of truth lies a real impotence to deal with the more important problems, these being also the more difficult. True, there was once a logical utility in speculations which had no scientific value; but this was only in the period of preparatory development. Now that the Positive method is thoroughly instituted in all its parts, and that the general purpose for which Science exists has been clearly manifested, there is no longer any excuse for mere academical specialities, and Western Europe will soon cease to afford them any systematic encouragement.

II. Nature of the Scientific Synthesis. Distinction of Abstract and Concrete. pp. 343–354.

The spirit in which these preliminary sciences should be studied will become more intelligible when I have explained the radical distinction between Abstract and Concrete Science. This distinction, which I now proceed to discuss, lies at the root of my whole conception of an Encyclopædic scale of the Sciences.

So marked is the distinction between abstract and concrete speculations, that, in my view, they correspond to distinct cerebral organs, as I shall explain at the end of this volume. Observation, as I have remarked in the preceding General View, is concrete or abstract, according as it deals with beings or with events. In all our intellectual products both modes are found combined: but the former, being essentially synthetic, is more adapted to Art, whether esthetic or technical; the latter, which in its origin is analytic, is specially concerned with science, strictly so called. These conceptions, laid down in my Positive Philosophy, have now been appropriated by all advanced thinkers. I have only to show how their application restricts the legitimate domain of Science to the limits by which alone it can acquire intellectual coherence and fulfil the high mission for which it is destined.

The Synthesis embraces only the series of abstract or irreducible conceptions; not including the mass of concrete or composite conceptions.

The distinction between concrete and abstract science is

in fact that the first class of speculations is composite and reducible to others, the second simple and irreducible. The former might be rendered entirely deductive, supposing that their component elements were sufficiently well known, and that our reasoning faculties were sufficiently strong. The latter on the contrary require a special inductive procedure in each case, whatever may be the prominence afterwards given to deduction. Therefore the great intellectual synthesis on which the religion of demonstration rests need embrace nothing but the conceptions of abstract science, provided that every order of phenomena be included. So constituted, it furnishes a rational basis on which human wisdom can take its stand, in the full confidence of possessing exact and systematic notions of the elementary laws from the composition of which each concrete result is produced.

Difficult as the discovery of these fundamental laws may often be, their small number allows us to hope that we may gain sufficient knowledge of them; and with reference to inorganic phenomena much progress has already been made. The majority of concrete laws, on the contrary, resulting from their innumerable combinations, will in all probability remain for ever unknown to us. But then it is not really necessary for us to know them. For the conduct of practical life, even in the higher departments of human affairs, all that is essential is that Abstract Science shall provide general indications to guide and co-ordinate the direct information furnished by sound empirical judgment. The notion that all the acts of life will one day be regulated by systematic teaching independently of all practical knowledge, is but the baseless utopia of speculative pride. It is incapable of realisation, we may feel assured, even in the simple arts connected with mathematics and astronomy, in which practice will always predominate over theory, although the value of theoretical knowledge will become increasingly important.

Difficulty of passage from abstract to concrete. Here scientific dogmatism finds its limits, and room for judicious empiricism must always be left.

It is therefore in abstract science alone that the systematisation proposed, that is to say, the religious co-ordination of all its elements round Sociology as their necessary centre, can or ought to be attempted. Without this fundamental distinction the whole intellectual synthesis would be impossible. To establish it still more clearly, I must remark that the conception of the universality of Law rests upon it.

The common judgment of men has always been that there are exceptions to every rule. Philosophers, meanwhile, are always searching for rules to which there is no exception. These two states of mind, which seem at first sight incompatible, are yet equally rational if we look at them from the right point of view. The way to reconcile them will be found in the distinction of which we are speaking, between abstract or simple laws and concrete or composite laws. The latter are necessarily special; the former admit of entire generality, which indeed is the true mark of their value. All the various properties of each object are subject each to their own invariable laws; laws common to all objects whatsoever possessing the same property. It is, indeed, little more than this that is meant when we speak of the Order of Nature. The true conception of this order is in no way deductive; it consists in the sum of the inductions belonging to each class of properties, aided, where necessary, by analogy. If these elementary inductions were not entirely without exception, the provisions of science could have no basis of certainty. But this generality, so indispensable to the coherence of our system of thought, can only be obtained by a process of abstraction in which the reality of our scientific statements is more or less impaired. As properties can only be studied in the objects to which they belong, the special circumstances of each case must be dismissed from the mind before we can grasp the law common to all. Thus, for instance, the dynamic laws of weight would still be unknown to us, unless we had first abstracted all consideration of the resistance or the motion of the atmosphere or other medium. Even in the simplest phenomena therefore we are obliged to decompose, and so to abstract, before we can reach that reduction of variety to constancy which is the aim of all sound speculation. Now these preliminary simplifications, without which there could be no such thing as science in the true sense of the word, always involve a corresponding process of recomposition when prevision of actual fact is called for. This transition from the abstract to the concrete constitutes the principal difficulty in the application of Positive truth, and is the real motive for the restrictions to which all theoretic teaching must ultimately resign itself. Theorists are here liable to enormous errors, analogous to those of the pure mathematicians when they professed to calculate so confidently the

actual path of projectiles. And this is the reason why, in the practical affairs of life, philosophers of the highest power are almost always either undecided or deluded. It is one cause amongst others for their notorious unfitness for political administration.

Respective functions of Dogmatism and Empiricism.

Perfect generality therefore and perfect reality are incompatible. The true method of investigation requires that these two equally indispensable conditions should be first separated as far as necessary, and afterwards skilfully combined. Dogmatism and Empiricism have an equal part to play in the conduct of life; left to itself either is incompetent, the one from its liability to illusion, the other from its want of foresight. Purely empirical laws, being adapted only to the special cases which suggested them, constitute mere erudition, which leads to nothing further, and differs totally from true science. However complete they may be, yet owing to the diversity of the circumstances in each concrete case, no new previsions can be drawn from them, and it is in prevision that the whole value of Positive speculation consists. On the other hand the unmixed dogmatism of abstract science would be equally injurious, though in a different way. Its conceptions, perfectly general and coherent as they are, would be adapted to none but a life of barren asceticism. In practical life its overweening confidence of prevision would render us liable to the most dangerous mistakes.

The adjustment here set forward between dogmatic and empirical teaching was incompatible with the absolute character of theology, under which both methods necessarily coexisted, but never worked together harmoniously. As all theoretical teaching was attributed to a divine source, it admitted of no exceptions; whilst practical notions having never been scientifically analysed made generalisation impossible. Traces of this conflict of methods, peculiar to the infancy of the human mind, are still very evident, especially in moral and political subjects, in which this state of infancy has lasted longer. We oscillate very often between the obvious practical necessity for making exceptions, and the peremptory demands of theory for inflexible rules of conduct; the result being that our rules are almost always either impracticably severe, or powerless from their concessions.

But under the Positive system it will be quite otherwise, as

we see already in the preliminary cases where that system has been partially realised. The new dogmatism being always relative in character is perfectly compatible with the elevated empiricism here set forward. We banish from the one the fruitless search for Causes; we no longer limit the other to the barren study of Facts. Practical research and theoretical research will be alike engaged in the study of Laws, that is to say, of Relations; these alone lying really within our reach, and these also being all that is necessary for our wants. The only difference is that the first investigates the general laws of each class of possible events, the second the special laws of each existent object. But this difference amounts really to nothing more than a fundamental division of all human labour, inculcated alike by instinct and by system; the character and the object of that labour being in both cases the same. We study properties only with the view of modifying objects. Human providence can only become rational when guided by prevision, and prevision requires general laws. But generality presupposes the decomposition of each special object into phenomena common to it with other objects; these alone can be reduced to invariable relations. Thus the broad distinction between abstract and concrete speculation is the basis of all sound thought.

Dogmatism therefore and empiricism are alike consecrated and controlled by the final religion; their combined action assisting the harmonious development of the Great Being. In the fundamental conception of Humanity both have participated equally: for all induction is empirical in its origin and dogmatic in its completion. Vast as the reach of Positive Science may now be, it should never be forgotten that it emanated in every case from practical activity by a gradual substitution of the study of Laws for the study of Causes. The universal principle of the Invariability of natural relations on which the whole of our intellectual system rests, is itself a pure result of experience. So far from originating in the dogmatism of early times, it was directly opposed to it; and this accounts for its slow and gradual formation, which has only just been completed by the foundation of Sociological Science. On the other hand, Abstract Science alone could supply the first general conception of Humanity. Empirical thought, however sympathetic, stops at the idea of the Family. It is with great difficulty that it

rises to the notion of the State, even in its original and most restricted form. Real as the existence of the Supreme Being is, its collective character necessitates many previous abstractions. Adequately to conceive of this vast and eternal organism, the direct observation, otherwise impossible, of its component elements, whether in the Past or Present, must first be cleared from all their partial antagonisms.

Difficulty of Abstraction in higher sciences.

Arduous as this task is, and impossible without close harmony between our moral and our mental powers, it is but the most complex phase of the problem always resulting from the process of abstraction which we have seen to be indispensable to the generality of our Positive conceptions. Throughout the scale of the sciences, the difference between abstract and concrete thought, and the difficulty of their separation, increase as the phenomena become less general and more dependent. So rapid is the increase of this difficulty, that if each department were to be studied in isolation from the rest, it would be in the higher stages insurmountable. But the dependence of each order of phenomena upon those which have preceded it supplies most valuable guidance, by means of which we are able to distinguish with sufficient clearness between the circumstances which are to be discarded and those which we are to investigate. It is only thus that we are enabled in the higher subjects to institute abstractions of quite as Positive a character as those which suggest themselves so spontaneously in mathematical studies. The two dangers to be guarded against are mere nominal entities on the one hand, and mere disconnected realities on the other. Now it is almost always impossible to do this unless deductions from previous sciences are allowed to guide the inductions of the science under investigation. By skilful combination of both we at last distinguish the principal phenomenon from the accessory or unimportant details which surround it, and thus lay down the requisite basis for abstraction.

Gradual development of the distinction between abstract and concrete.

After what has been said, it will seem at first sight strange that this wide distinction between abstract and concrete science should practically have been brought into operation in modern times, long before any formal definition of it was possible. The explanation lies in the very nature of this preliminary development of science, the object of which always was to bring each elementary class of speculations into the Positive stage. Until

each of the categories in which phenomena are to be classified had been penetrated by the Positive spirit, concrete science was in fact impossible. The existence of each object offers a special combination of properties common to it with others. For its scientific consideration therefore we first require the abstract study of all the general phenomena which compose it, and which supply the first materials for the analysing process. In all concrete problems, as, for instance, in meteorology, we have to combine the five preliminary aspects, the mathematical, astronomical, physical, chemical, and even biological, with that which is central to them all, the sociological aspect. As each result is produced by the co-operation of these six orders of influences, the omission of any one of them would vitiate the solution, or at least impair its accuracy. Under the pressure of this logical necessity, modern men of science have been forced to limit themselves to Abstract Science, although Concrete Science was in most cases what they aimed at. Their works on natural history, organic or inorganic, have all failed in their main object for want of a sound theoretical basis. But the chemical and biological investigation to which these works gave the stimulus, will be permanently incorporated into the synthesis of abstract truth which is to serve as a foundation for the conduct of human life.

Synthesis of concrete science impossible needless.

We might suppose from this historical explanation that the time was at last come for the formation of Concrete Science, the six classes of truths which are concerned in it having been now opened out for investigation. But simultaneously with this condition we have the systematic establishment of the final religion, controlling all future scientific researches, discouraging, alike on moral and intellectual grounds, all useless or impossible efforts, and directing all our energies to the continuous service of Humanity. And it is my own conviction that the concrete sciences, in the true sense of that word, will always remain beyond the reach of our feeble intellectual powers, and will moreover not be needed for the guidance of our action. What is really necessary is abstract science, and little further than that is accessible to us.

Only by this elimination of concrete enquiries can a synthesis of scientific truth become possible. Including as we do none but abstract theories, we have already attained that synthesis in all essential aspects, by the discovery of the

two great laws of Filiation and Classification, on which sociological science rests. Disconnected as the various truths of science may have seemed previously, that discovery brought to light their mutual relations, and their connection with the common centre. With all true thinkers the abstract sciences are now no longer regarded as a plurality, but as a definite unity. But utter confusion would be introduced into this synthesis, if any attempt were made to include in it the concrete sciences. These can never lose their multiplicity, owing to the isolated and divergent character of these subjects.

We shall never be called upon to found a system of concrete truth, even as an appendage to the abstract system. Adequately to constitute any one concrete science, as for instance, Meteorology, or Geology, is a task far beyond our inductive or deductive powers; whether from the difficulty of knowing all the truths connected with the subject, or from the difficulty of combining them. But our incapacity to deal with these extensive and multitudinous subjects is no real cause for regret: since by far the greater number of them have no considerable value, even as logical exercises. Of the innumerable objects which surround us, a very small proportion deserve our special attention from the direct relation they possess to the Great Being who is the centre of our speculations. To continue to spend time and labour in zoological and geological studies, now that the necessity for preparatory training of our faculties has ceased, would be a misuse of faculties which ought to be carefully reserved for their sacred mission. Valueless for all material, physical, or even intellectual purposes, such studies are most detrimental morally, from their tendency to develop pride and to harden the feelings. The Religion of Demonstration, according as it does to intellect so honourable a place, will be even more severe than Revealed religion against these learned puerilities, which instead of bringing us nearer to the great purpose of life, lead us farther away from it. When abstract science has been carried far enough to form the basis for man's practical wisdom, much more attention will be given to esthetic than to scientific pursuits. Esthetic study, besides being better adapted to our intellectual powers, has a far closer relation to the great aim of life. Feeling and Reason will alike condemn studies of which the mental utility is as insignificant as their moral tendency. Abstraction is praiseworthy only as a

means of obtaining generality. Speciality, again, is valuable only when its results are useful. In the Positive system, in which the general conduct of life will be carefully watched by the priesthood and by the public, all abstract investigations that are not general, and all concrete investigations that are not useful, will incur the severest censure.

Concrete studies should be limited by considerations of utility as belonging to domain of Practice, not of Theory.

The distinction between abstract and concrete research is in fact reducible to the fundamental distinction between Theory and Practice. Properly speaking, therefore, there is no such thing as Concrete science. Every science necessarily becomes abstract as soon as it has been sufficiently disengaged from the art dependent on it. The only concrete studies which it is necessary to retain are those connected with the various special requirements of private and public life. But such studies are essentially practical in character, and will be much benefited if for the future they are treated as such. Here the specialising spirit is at once in its true sphere; concerning itself no longer with the conception of truth, but with its practical application. To take in the whole range of truth is both possible and right; but it is neither possible nor right to attempt the whole range of activity. Therefore the theoretical spirit should always be general; the practical spirit always special. This necessary specialisation of practical conceptions is, however, perfectly compatible with the synthetic character required in this ever-recurring problem of combining different elementary aspects of abstract truth, so as to avoid error in the final result.

I shall show later on what are the real differences between theoretical and practical thought, differences which the intellectual pride of philosophers has led them to regard so erroneously. The difference lies neither in the nature nor mode of action of the mental faculties employed, but only in the degree of their activity, and in their application. In the final state of society, the only scientific specialists will be practical men, with functions more or less resembling those of engineers in the present day. There will be no pure theorists except philosophers in the true sense of the word, or rather priests, whose life will be devoted to the construction and application of the general synthesis. From this universal source, practical men will draw the rational basis of each special synthesis, which they alone are competent to construct, from being thoroughly conversant with its nature and object. Such

a task seems at present beyond their powers only because of the absence of any proper system of education. Trained in the manner described in the preceding review, they will be sufficiently prepared intellectually for all the real exigencies of their position; the study of concrete truth will then be pursued with all the interest and zeal that it deserves, although it will no longer absorb, and to so little purpose, the attention of any special class. Amidst the unlimited mass of concrete problems which present themselves, practical men alone can distinguish the small number which are really indispensable, discarding the remainder as devoid of all interest. Difficult as the distinction may be for our scientific men, even for the students of applied science, practical men of enlightenment understand it unconsciously, because the success of the work they are engaged in depends directly upon it. This consideration moreover gives increased logical value to the special synthesis in question, by giving a right direction to all preliminary stages in the solution of the problem. A strong and constant sense of the social usefulness of the result will preserve these practical enquiries from the moral hardness to which theoretical speculation is too often liable.

It results then from this elaborate enquiry that the immense field of the so-called concrete sciences will finally disappear; some of the researches connected with them being abandoned as useless; others incorporated with the corresponding arts. The true purpose of these special studies is to create the various orders of conceptions which stand half way between theory and practice, and which are at present in so imperfect a state, requiring as they do the combination of all the primitive elements belonging to the sphere of abstract science. But to combine these elements is essentially the task of practical men. The application of an instrument, whether mental or material, belongs to the user of it, not to the maker. Only on this understanding will it be possible to avoid digressions as unprofitable to the intellect as they are injurious to the heart.

This restriction no less applicable to sociology than to other sciences.

So inflexible on this point is the spirit of the final religion that even sociological studies, predominating as they do over all others, will be subject to similar restrictions. The study of the true Great Being is not to be undertaken with feelings of idle curiosity; here as elsewhere, Feeling must control Reason, or the moral standard will be compromised. True, the great spec-

tacle of social Evolution is the most marvellous of observed facts; and consequently is the richest field for ideal creations. But the intellectual pleasure, noble as it is, of contemplating it must never be allowed to lead us away from the sacred purpose which it is intended to serve. After all, the only object with which Humanity ought to be studied is that we may love and serve her more. Personally the chief reward of such study lies in the stimulus to improvement of every kind, especially in the moral sphere, which it invariably brings with it. Now without the constant control of religious discipline, enforced by the public no less than by the priesthood, this final science during the process of elaboration may degenerate into academic specialities quite as easily as the rest. Such digressions doubtless might have greater theoretic interest, but they would be nearly as valueless whether morally or intellectually. Indeed the danger would be greater, because since in this case the concrete point of view differs more widely than in any other from the abstract, greater intellectual efforts are demanded, and therefore the greater is the loss in their misapplication. Here then, more than in any other department, concrete investigation should be limited to matters of real practical exigency, and all theoretic deviation should be discouraged. The only distinctive feature of sociology in this respect is that philosophers teach not merely the theory, but the applied science, or art corresponding to it; the practice of this art being common to all mankind. But this distinction has no influence whatever on the limits that should be placed on concrete study, and on its subordination in every case to our practical requirements.

Ultimately no doubt the sociologist will have to take careful cognisance of such conditions as those of climate and of race, which when dealing with the abstract theories of Sociology, I have systematically kept out of sight. But this will not be necessary until the time comes for extending the civilisation of the regenerated West to populations of less advanced growth. Such an object, while adding to the attractiveness of these concrete problems, will at the same time preserve them both from theoretical digressions and from moral deterioration. For the present, however, those high intellects, who by the formation, incomplete though it be, of Sociological Science, are called to a sacerdotal mission, should devote themselves to questions of Sociocracy and Sociolatry. Intellectually both

fields of practical enquiry are inexhaustible, and morally they are most valuable. The improvement of our conduct, private or public, and above all, the elevation of the feelings from which it springs, are studies open to all and yet offering problems for the strongest minds. No art is so important or so difficult, and yet none admits of such satisfactory results, since the phenomena with which it deals, being more complicated than any other, are also more modifiable. Now that the laws which regulate them begin to unfold themselves, they will gradually absorb the chief attention both of practical and theoretical enquirers; whereas, hitherto, the heart in these questions, instead of availing itself of the service of the intellect, has been obliged to take its place and has often corrected its judgments. Private devotion may of itself suggest many touching and beautiful artifices, giving greater scope for moral and even for intellectual power than the majority of scientific investigations. Their importance may be illustrated by those remarkable works of the mystics which shed such lustre on the decline of Catholicism, and which without containing a single discovery of unknown truth, testify to the strong intellect no less than to the noble feeling of their authors.

Eliminating therefore concrete science, and referring its problems to the domain of practical life, the great encyclopædic series, and by this means the whole synthesis of human life, becomes materially simplified. All is thus reducible to the one obvious and radical distinction between Theory and Practice; the true nature of which will be explained in the second volume of this Treatise. We escape at once from the necessity of preparing a vast body of intermediate truth, which, by rendering the Synthesis of Positive thought far more difficult would have retarded the progress of Humanity towards its normal state. Besides, this elimination gives greater distinctness to the plan on which Society will, in the future, be organised. We see the theoretical power and the practical power distinguished not merely by the difference between their consultative or governmental functions, but also by the generality or the speciality of their respective points of view.

III. Plan of Scientific Synthesis. Combination of objective with subjective method, pp. 355–368.

Having thus explained the religious purpose and the abstract character of these Introductory Principles, it remains to speak of the method on which this preliminary basis of logical and scientific truth is to be constructed.

We shall find it useful to comprehend the first four sciences, those which deal with the inorganic world under one collective term. As far back as 1844, in my *Remarks on the Positive Spirit*,[1] I had arranged these sciences in two groups; mathematics and astronomy forming one, physic and chemistry the other. Proceeding a step farther in the same direction, I now propose for the whole group of inorganic sciences the title of Cosmology, a word which seems at present quite open for such a purpose. Its old acceptation is sufficiently obsolete for its readoption in the sense in which I here propose to use it; and which, while fully in keeping with its etymology, obviates the necessity of coining a more suitable term. All that is needed with reference to its original connotation is to get rid of the absolute notion of *Universe*, and substitute for it the relative notion of *World*; an essential modification for which the philosophical study of astronomy will prepare us. The necessity for such a word as Cosmology would have been felt before but for the dispersive manner in which the Sciences included in it have been studied. What characters they have in common have only been vaguely indicated by negative terms.

Division of Natural Philosophy into Cosmology and Biology.

Natural Philosophy, then, properly so called, as distinct from Social Philosophy which it precedes and prepares, is composed of two great Sciences, Cosmology and Biology; terms which render the contrast between them more distinct.

Conceptions of the World, and of Life, mutually necessary.

This point settled, we have now to determine the order in which the study of the World and the study of Life, the twofold basis of the great final study, that of Humanity, should succeed each other. First, however, it will be well to point out the essential harmony which exists between these two sets of introductory principles: the one being general, and indirectly related to the main subject; the other special, and related to it directly.

Neither the natural distinction between these two sciences, nor the necessity of their co-existence, have as yet been sufficiently realised. Cosmologists endeavoured for a long time, and have not yet ceased endeavouring, to reduce Biology to a mere appendage of their own science. And though the best biologists have begun to resist the pressure thus put upon them, they have fallen into a retrograde course of thought in their

[1] Published as an Introduction to the author's *Popular Astronomy*.

wish to prosecute the study of Life irrespectively of its essential relations to the study of the World. The two schools, materialist and spiritualist, are alike inconsistent with the true spirit of Natural Philosophy, whether from the scientific or logical aspect. They both ignore the great dualism which lies at the very root of the fundamental dogma of Positivism, the Invariability of External Relations.

Phenomena unintelligible without percipient.

The mere conception of such relations presupposes, as Kant so clearly saw, an object governed by them, a subject conscious of their existence. Even the relations between two inorganic bodies cannot be perceived except by the connection of both with an intelligent being; intelligence presupposing life. Thus the notion of Life, properly so called, in the sense in which modern biologists have used it, is a necessary element in every conception of fact. There are doubtless many stars incompatible with the existence of organised beings, as is the case in our own system with planets which have no atmosphere. But even were it true, what seems highly improbable, that no planet is inhabited but ours, life and thought must exist here, if nowhere else, to render the conception of the simplest object anything but self-contradictory. In a word, every phenomenon supposes a spectator: since the word phenomenon implies a definite relation between an object and a subject.

Life, from lowest to highest functions, implies adjustment of organism to environment, of subject to object.

But on the other hand the true conception of Life is still more impossible apart from that of the World. For Life requires the maintenance of a constant harmony, active as well as passive, between every organism and the environment to which it is adapted. In the lower scales of being the necessity for such harmony is evident, because the dependence of the organism on the environment is circumscribed within narrower limits. But so far from the dependence being less as we ascend the biological scale, we find it necessarily increased; because the relations are more numerous and complex, though each one of them may vary within wider limits. It must be observed, however, that this increase of interdependence applies to the reactions of the organism no less than to the pressure of the environment. The highest of all beings, Humanity, is that which is most dependent on the World, but also that by which the World is most largely modified. Thus we find the ideas of Submission and of Power, rightly understood, to be united even in their source. Increased energy always accompanies increased dependence.

Starting from these two principles, we shall find in the Positive Synthesis a clearer conception both of the distinction and of the concordance between Cosmological and Biological truth, than is to be found in any previous system. To conceive of all bodies as endowed with life is in reality as impossible for us as to imagine them all lifeless. The very notion of Life presupposes the existence of substances which do not possess it. There are, it is true, parasitic organisms vegetating on beings of a higher order. But such exceptions could never become universal. Ultimately the existence of Life presupposes a passive environment, directly or indirectly sustaining the organism and fixing its habitation. Consequently the pantheism of the metaphysicians is even more antagonistic to our reason than pure fetichism, of which in fact it is a mere parody clothed in abstruse language. Fetichism at least supplied a training for our nascent powers of thought; Pantheism would drive reason back into the nebulous obscurity from which it has long since issued.

Law, i.e. constancy amidst variation, implies harmony of biological and cosmological relations.

If Life was universal, the existence of any natural law would be impossible. For the tendency to vary which is inherent in the spontaneity of every living organism, has in reality no limits except those imposed by the constant and irresistible pressure of the environment. Remove this pressure, and the variations would become indefinite, so that all notion of Law would at once disappear; the essential characteristic of a Law being constancy of relations. Those thinkers who put forward the conception that the Earth was an immense animal, could have had no proper idea of what the word animal implied: or they would have felt that such an hypothesis was utterly incoherent. The simplest physical laws, even the laws of Weight, would be incompatible with the vitality of the Earth: not to mention that projectiles would themselves share this vitality. Prevision of future events, whether founded on reason or experience, would be alike impossible; even supposing the possibility on this absurd hypothesis of our own existence.

All positive speculation rests then ultimately on the continuous combination of Fatality with Spontaneity; the source respectively of our ideas of constancy and variation. Thus the fundamental doctrine of Positivism consists in a constant accordance of two kinds of laws, antagonistic yet at the same time inseparable; external or physical laws, and internal or

logical laws. Or, to use terms at once more general and more definite, the Constancy of Natural Relations results from the permanent adjustment of biological to cosmological truth.

This harmony variable; and sociology deals with the laws of its variation in man.

Though involved in metaphysical obscurity, this great dualism, the basis of all human knowledge, has always been seen more or less indistinctly by true thinkers. Since Kant wrote, more especially, it has been admitted that physical laws presuppose logical laws, and *vice versâ*. But in this first glimpse of the truth, the mistake was made of separating intellectual functions from the other functions of life; an error which the philosophical study of biology removes. It was subsequently perceived that the harmony between these two sets of laws was by no means absolute; that it was relative both to the nature of the organism and to that of the environment. Even on our own planet it varies with the different modes and degrees of animality, although such variation is never arbitrary. Human speculation may thus be said to consist in forming such a conception of this relative order as our faculties admit and our necessities require. But this primary principle cannot be fully understood, nor indeed divested of all absolute tendencies, until the notion of biological laws strictly so called be completed and systematised by that of sociological laws. With the creation of Sociology, the system of human conceptions is seen to be subject to yet another class of uniform variations, not dependent either on our nature or on our position, but relating simply to the evolution of Society. These have to be kept constantly in view if we would understand rightly the march of human thought; indeed without them, it is impossible to explain either the nature of our ideas or their association, whether simultaneous or successive. If, on the other hand, it was possible that these sociological laws could ever be sufficiently grasped by us, they would be sufficient of themselves as a substitute for all others, assuming the difficulties of deduction overcome. For though all human discoveries are the work of individual organs, they are in reality acts of Humanity. They are therefore under the direct influence of the laws which regulate the existence of this Supreme Being, and consequently fall within the scope of sociological prevision. Only we must remember that these highest laws of the Relative philosophy are necessarily subordinate to two classes of preliminary laws, dealing with the outer environment and with

vitality. Without therefore insisting on an hypothesis which is only to be regarded as a useful mode of explanation, we may define the Synthesis of Positive truth as having for its subject-matter the relation of Humanity with the two correlative conceptions of the World and of Life.

These two conceptions are thus more distinct, and at the same time more inseparable, than students of either have as yet perceived. It may help us to realise both the distinction and the correlation, if we try to suppose ourselves studying Life in a distant region perfectly accessible to the sense of Vision, but otherwise unapproachable. We should observe nothing at first but inorganic existence, as with the planets of our own system; biological phenomena would be at first disregarded. But ultimately their reaction on the environment would bring these less obvious phenomena to our notice, and we should see that they belonged to beings of a more complex and variable nature. Our investigation of such a region would thus branch off into two divisions: that of its inorganic and that of its organic phenomena; both being alike indispensable to a true conception of it. It is in a somewhat similar way, although far less definite, that the gradual discovery of a new animal species or human tribe actually takes place. It is the environment which first strikes our sense: gradually we distinguish the organism, without, however, disconnecting it from its surroundings.

Order of succession. Objective method, passing from the World to Man, predominates.

From the correlation between these two component portions of Natural Philosophy, we now pass to the consideration of their order of precedence; for on this depends the value of Natural Philosophy as the rational basis of the philosophy of Society.

Keeping this ultimate purpose in view, we shall have no difficulty in determining the question. The same general principles, whether scientific or logical, which indicated that the study of Cosmology and Biology should precede the study of Sociology, show us clearly that it is with Cosmology rather than with Biology that we must begin.

Between the two opposite methods of which the general elaboration of Natural Philosophy might seem to admit, there is for us in the present day no option. The objective method, that which proceeds from the outer world to the inner, from inorganic to organic nature, is the only method possible; whether for the systematic philosopher or for the empirical observer. Nevertheless, the inverse or subjective method, proceeding from

within outwards, from the study of Life to the study of the World, now has its proper place: and this we have to determine. It is to this method that Humanity owes the first germ of its mental growth; and, reconstituted on other principles, it will still continue to play a part in the mature development of our reason. Its position relatively to the objective method will occupy the remaining portion of this chapter. The subject has been already discussed in the General View, upon principles laid down in my treatise on Positive Philosophy.

In that treatise the true Classification of Sciences was explained in such detail, and has since been so generally admitted, that I need not recur to the subject. Its principles, as my readers are aware, are the decreasing generality and the increasing dependence of the phenomena with which each succeeding science deals. These two principles are, in fact, equivalent. Guided by them, we arrange the abstract sciences according to their more or less intimate connection with the phenomena of human nature, the least general and the most dependent of all.

The laws of Cosmology are essentially independent of Biological laws. The reactions of these latter on the inorganic environment are, relatively to it, usually of secondary consequence, though relatively to the living organism they are of the highest moment. Organic existence, on the contrary, is closely dependent upon inorganic conditions, even on those which concern the Earth as a whole. A few very simple changes in the arrangement of any planet would render it impossible for us to suppose that life exists there. The higher generality of cosmological laws is the more evident that the bodies over which they possess exclusive dominion preponderate so largely; vitality, in fact, may almost be considered as an exceptional state. In our own planet, the only one where the investigation of biological laws is accessible, life is possible only within its outer envelopes: and even there the total sum of objects possessing it constitutes but a small fraction of the inorganic mass.

As a question of science, therefore, the Positive study of Biology requires a deep though general knowledge of Cosmology, to the principal laws of which every vital function is subordinate. And logically viewed, the subordination is still more evident; since the simplicity of inorganic phenomena, resulting as it does from their generality, renders them the fittest sphere for working out the method applicable to all.

Under both these aspects then, the systematic arrangement of the preliminary sciences agrees with the order in which they successively presented themselves; so that the motives which lead to the arrangement derive their weight alike from philosophical and historical considerations. There is nothing accidental in this coincidence. It follows from the similarities which must always exist between individual and collective development.

The systematic arrangement of the sciences therefore, no less than their historical filiation, must be determined by the Objective Method. It would be impossible to find a firm basis for the fundamental doctrine of natural laws, unless we began with the cases in which the invariability of relations was most manifest. The infancy of our intellect was passed under the tutelage of the Subjective Method; because it was the only method calculated to satisfy our desire for Causes, the objects on which our first efforts are concentrated. The obvious contrast of these two methods, and the respective purposes of each, explain the radical antagonism between Theological and Positive Philosophy.

But the subjective Method, from Man to the World, though hitherto provisional and theological, has a permanent and positive part to play.

But this long preliminary struggle, the leading feature of man's past history, is now terminated. Positivism has at last embraced the full extent of its domain, and stands before us as the sole basis for the final Religion. It is time therefore to reconsider whether the provisional exclusion of the Subjective Method, maintained as it has hitherto been for the sake of scientific progress, is to be permanent. There are inherent advantages in this method which alone can compensate the defects of the method opposed to it. Positive Logic therefore requires for its completeness and stability that the two methods should be mutually adjusted. The previous history of Science is no proof that such adjustment is impossible; provided that both methods be subjected to a systematic revision, in which the intellectual and social purpose common to both shall be constantly kept in view. It would be as unphilosophical to suppose that Theology is to monopolise the Subjective Method, as to imagine it the only possible basis for Religion. In this latter case Sociology has already shown its power of adaptation. And it will do so no less in the former; the two cases being indeed intimately connected.

All that is necessary is that the Subjective Method be no longer directed to the useless search for Causes. It must be applied, as the Objective Method is applied, exclusively to the

discovery of Laws; the end in view being to ameliorate human nature and human circumstances. In a word, the Subjective Method must cease to be theological, and must become sociological. And this transformation is now for the first time rendered possible by the recent application of positive science to the general evolution of Humanity.

That part consists in constant maintenance of constructive and human standpoint.

For with the occupation of this field the provisional condition of the human mind is brought to a close, and its normal condition is at once begun. Hitherto Positive thinkers have done nothing but empirically elaborate the materials for the future edifice; of the complete structure they could form no conception. By embodying in our educational system the method indispensable to man's earliest development, the progress of science will follow a more regular course, because the final purpose to which it is to lead will never pass out of sight. The foundation of Sociology renders the Subjective Method for the first time compatible with Positive Science. It places us once for all at that point of view which can truly be called universal. Thus regenerated, this method will evince more clearly than ever its peculiar power of generalising and enlarging our views, and thus rendering them more real. Its permanent influence over the Objective Method is the sole means of preventing the deviations to which the latter is prone, whether from misapprehension or from want of purpose.

The true logical balance of the faculties is then that in which the Subjective and the Objective Methods are employed in combination. The one prompts the spirit of generality, the other the spirit of detail; both equally indispensable to the progress of Positive knowledge. It will be the function henceforth of the first of these methods to direct the action of the second; the second will, in turn, constantly be producing improved materials for the first to work with. From their combined action springs the true Logic of Religion, sanctioning thus and regenerating the two opposite modes by which Theology and Science, each in its own way, prepared us for the normal state. Henceforth Humanity, left at last unhampered by her various predecessors, will herself propose the questions to be solved, and will take the first general steps towards a solution, reserving the final elaboration of the problem for competent individual organs.

It may throw some light on this difficult subject if I refer

to my personal experience. My own philosophical writings, considered as a whole, illustrate this final and complete adjustment between the Objective and Subjective Methods of which I have been speaking. In the Positive Philosophy the former method obviously preponderates, and that to such an extent that some might think it had a tendency to exclude the other altogether. But this preponderance was rendered necessary by the character and purpose of the work in question. The object was to lay down, one by one, by a sound analytical process, the various elements necessary for a perfect Synthesis. The result of the first work was the foundation of Sociology, and the consequent possibility of regenerating the Subjective Method. This method being thus rendered as Positive as the other, infuses its more rational character into this my second great work. I have already employed it frequently, both in the preceding General View, and also in this chapter, with the view of giving a more systematic form to scientific conceptions originally due to the Objective Method. After this distinct explanation of its permanent importance, I shall henceforth be more free to avail myself of its great moral and intellectual advantages.

Relation of the two methods in author's works.

The natural harmony of the two methods has already been made very evident in the subject of the Classification of the Sciences. The Objective Method classified them on the principle of their logical relation to each other. The Subjective Method arrives at the same result by considering their connection with the religious purpose towards which they converge. Striking as this harmony is, it will become still more evident in the two following chapters. Adopting the same synthetical procedure, we shall grasp the true relations of Cosmological and Biological Science, in a way which analytical processes could but roughly indicate, or rather for which they have but prepared materials. In my Positive Philosophy the various sciences were seen gradually to converge towards a centre, not at first very clearly defined. But in the present work, based as it is upon the preceding, this central conception will react upon the preliminary conceptions which combined in creating it, and will bring them into their final and systematic form. In a word, my first work developed Philosophy from Science; the present work transforms it into the matured and permanent condition of Religion.

Thus, by bringing the subjective and objective methods into

The harmony of the two methods constitutes Logic in its widest sense.

complete adjustment, we reach at last an adequate conception of the true nature of Logic; a word, as here used, including all instruments calculated to reveal to us the truths which human necessities require. Hitherto such a combination has been impossible: partly from the imperfect development of the various modes of intellectual procedure, partly because the social purpose common to all of them had not been clearly defined. But now that Sociology is once for all substituted for Theology as the basis for the religious government of mankind, the spirit of generality and the spirit of detail, purified from their respective errors, will alike be concentrated on the continuous service of Humanity. The long antagonism of Analysis and Synthesis passes into a permanent alliance, in which each method will in its own way supplement the principal shortcomings of the other. The objective method used alone is of great value, when wisely employed, in the elaboration of materials. But, even in its systematic form, there is the danger of losing sight of the general point of view, or at least of postponing that view, until the termination of so enormous a series of researches, as would leave our mental energies well nigh exhausted. Conversely, the subjective method exclusively employed, while keeping the system as a whole constantly before us, would not leave the mind sufficiently free to gather the materials necessary for the stability of the edifice. It is only by a skilful combination of these two methods used alternately, the one beginning where the other leaves off, that the defectiveness of each can be remedied; and thus the best use made of our small supply of intellectual force, so inadequate when left to itself for the social problems with which it has to deal. No doctrine of the final religion can be considered as satisfactorily established until it has passed through the ordeal of both methods, whichever it may have been that first suggested it. Without such corroboration the new faith could hardly maintain its ground against the tendency to constant discussion, to which the nature of its teaching renders it ever liable.

This harmony an immediate result of the conception of Humanity.

This general harmony of the two methods flows naturally from the central principle of Positivism: a principle alike objective and subjective in its nature. Regarded intellectually, the conception of Humanity sanctions the objective method; because there is involved in this conception the subordination of Humanity to the external order of the World. But from

the moral aspect, the recognition of this Supreme Being gives greater prominence to her own destiny than to fatalities of other kinds. If Thought were to remain isolated from Action, its procedure would be always to begin with the World and end with Man. But as this is not the case, as Thought is intended to be the guide of Action, Man is to be kept ultimately in view throughout every department of cosmological study. The social motive by which both these aspects of life are alike to be regulated, gives precedence alternately to the subjective or objective methods, as the religious aim in view may render necessary.

Combination in Positive Synthesis of Logic of signs, with Logic of Images, and Logic of Feeling.

Thus the promise given at the outset of this chapter has been fulfilled. I have shown that the Logic of the Intellect, guided in the main by artificial signs, is, in the normal state, adjusted with the Logic of the Heart based on the direct relation of the sympathies. This latter, essentially subjective as it is, would seem at first sight out of place except as an instrument of moral culture. But as we have just seen, it plays its part in the elaboration of intellectual truth ; and its action will appear throughout this Treatise with increasing prominence. Similarly the other form of Logic, objective though it be for the most part, is not necessarily limited to the discovery of truth. It will be seen henceforth to possess a most important moral influence. All can appreciate its use in strengthening personal recollections : can see that they become more vivid and more durable when the physical environment is fixed in the mind before endeavouring to recall the living image. Neither the mind nor the heart can develop their full energies harmoniously except by constantly combining, whether consciously or unconsciously, this Logic of Feeling with the Logic of Reason. This combination I was enabled to realise at the outset of my career, as I have shown in the preface to the last volume of the Positive Philosophy, through the important discovery of sociological laws which forms the starting-point of my labours. My political sympathies and my scientific tendencies, which hitherto had had no connection with each other, were thenceforth rendered convergent. And the advantage of attaining this convergence so early was, that I was enabled to devote the periods of youth and maturity to two separate yet correlated undertakings, either of which might have been thought better adapted for a different period of life. What has been said explains also the accession of mental power due to the sacred influence of her who remains

my constant companion. A stronger proof could not be given of the necessary correlation of these two universal modes of mental activity.

But whatever indications may have appeared as yet, Logic, in the true religious sense of that word, including the subjective as well as the objective mode, is assuredly still in its infancy. The development of its characteristic features is left for the future immediately before us. Even of its intellectual aspect, which alone has been hitherto cultivated, the conception at present formed is inadequate. There has been no real recognition of intellectual laws; because it is only from a study of the scientific evolution of Humanity that these laws can be appreciated. Modelled on metaphysical ideas, Logic has as yet given us nothing but a few vague and barren rules; and has usually occupied the student's time with childish and delusive formalities. In its moral aspect the progress of Logic was still less possible; the facts connected with emotion never having been regarded as amenable to Law. No serious attempt has been made in this direction except during the Middle Ages, under the influence of Catholicism: I refer especially to the remarkable productions of the great mystic writers during the 14th and 15th centuries. Their first empirical efforts prepared the way for the more comprehensive and systematic agency of Positivism. For the principal field of Positive thought will in future be that known to the old theologians under the title of Grace; a subject henceforth reducible to definite laws enabling us to base action upon sure knowledge.

Thus however beneficial the new system to intellectual Logic, used principally by thinkers, it is still more indispensable in framing and developing the Logic of Feeling, more especially appropriate to the feminine and to the popular mind. Between these two extreme modes, there is an intermediate link, the Logic of true poets, using Images for its instruments. The correlation of the various systematic forms of mental activity, whether spontaneous or systematic, is now complete. Hitherto Images have been employed mainly with the view of giving either thought or feeling suitable expression. Henceforth their value will be recognised in the original development of both; being as they are the natural agents of their mutual reaction. In the one case the Image connecting itself with the artificial Sign will rekindle Feeling and so strengthen Thought; in the

other case it will be the outburst of Feeling which will evoke the Image, thus rendering the Thought more clear.

Both of these beneficial results of the final synthesis depend entirely on the Positive character of the new subjective method. The very fact that in its old form it was theological, or at least metaphysical, rendered it incompatible with the objective method, which from its first origin was positive because it was always endeavouring to attain the power of foresight as the basis of effective action. The mind was being driven in an absolute direction by the subjective method, in a relative direction by the objective; the constant antagonistic strain making all logical harmony impossible. The first condition of mental consistency was homogeneity of method. Now it being out of the question to eliminate objective modes of thought from practical life, the alternative was for thinkers to abandon the subjective mode, at least during the stage of preliminary scientific development. But this stage is now complete. Analytic processes have been applied successfully to Sociology, and have thus furnished the basis of a new synthesis. Consequently the subjective method, resting as it now does on the recognition of Humanity, becomes not less relative than the objective method based on the general conception of an External Order. Such then is the true organisation of intellectual activity, relatively to the position and circumstances of our race. Perfect mental harmony was unattainable at any former stage, unless theological modes of thought could have become objective; but this, even under polytheism, was never possible.

And morally, the superiority of the new religious Logic is even more direct and more complete than it is intellectually. For Subjectivity in its Positive form, being real, is necessarily social; whereas its theological mode was invariably personal, because absolute. The former regarded the world and its contents as if they had been created for man; the latter looks upon Humanity as destined to ameliorate that small fraction of the universe which admits of our intervention. Now this view, superior as it is to the other in wisdom, is still more superior to it in morality. Governed as we have been hitherto exclusively by the former, we owe to it the culture of feeling no less than of thought; indeed its influence over feeling has necessarily survived its influence over thought, which the practical conduct of life always rendered precarious. But the belief that the old

Synthesis is without a rival in the field of emotion, rests upon an empirical view of the subject which has long since ceased to be true. Now that Monotheism has lost its political influence, all can see that its moral standard, of which so much has been said, was, in principle, self-love carried to the highest pitch, and wholly inconsistent with any effective organisation of Social life. In the new Synthesis the substitution, intellectually, of the Relative for the Absolute, and morally, of Humanity for Man, follow each as a consequence of the other.

Such then are the general features of the scientific and logical Introduction on which Sociology rests. The two following chapters will contain a closer examination of each of its correlative branches.

CHAPTER II.

INDIRECT INTRODUCTION, MAINLY ANALYTIC; COSMOLOGY.

Summary of preceding chapter.

Natural Philosophy, on which the Philosophy of Society is based, occupies itself with the general laws of all the essential phenomena, organic or inorganic, of beings lower in the scale than Humanity. Although the great Being is itself subject to these laws, and is the most important illustration of their action, it is not here that they are to be investigated. To understand them rightly they must be examined in simpler cases, where they are exclusively preponderant, and unmodified by any more complex agency. It is moreover only by such preliminary study that we can elaborate the general method by which the higher but more difficult studies are afterwards to be directed. This it is which constitutes the great though indirect value of Natural Philosophy, whether from the logical or scientific point of view; a value quite independent of the utility of the knowledge which it conveys. In addition to this, Natural Philosophy explains to us, on the one hand, the inert environment on which Humanity is dependent, and, on the other, the living organs of which she is composed. And lastly, these two departments of knowledge furnish the systematic basis for her providential action: by which she is for ever ameliorating the material and physical conditions, whether in Man or in the World without, of her moral and intellectual existence.

Special difficulty and importance of discipline in Cosmology.

The preceding chapter has shown generally how the Religion of Humanity will deal finally with this vast body of truth, which, historically speaking, prepared the way for its establishment. But the full sanction thus given to the study of Natural Philosophy involves rigorous correction, and if possible prevention, of the errors to which these studies are naturally prone. Their direct object being independent of the final aim which should invariably be kept in view, they are liable to degenerate into indefinite digressions; and these can only be remedied by

constant recurrence, wisely regulated, to the grand object which they are intended to promote. The public and its teachers should always refuse to recognise investigations which do not tend either to determine more precisely the material or physical laws of human existence, or to throw greater light on the modifications of which these laws admit, or at least to render the general method of investigation more perfect. The field of legitimate enquiry is sufficiently wide to prevent the new religious discipline from ever exercising that oppressive control over the lower sciences which theology once exercised, at least in its decline. Those only will be dissatisfied with it whose apparent aptitude for useless enquiries is nothing but secret incapacity for investigations of a higher order.

It was important to recall these considerations at the beginning of this chapter; since its special object is to systematise, by the Subjective Method, those departments of truth in which the digressions characteristic of the Objective Method have been carried to their greatest length. Less closely related than other studies to the central object of all knowledge, admitting of indefinite extension, and at the same time easier to investigate and yielding more precise results, Cosmological studies are at once the least amenable to wise control and the most in need of it. For a long time they were the sole source of the true philosophical spirit: they now form the chief obstacle to its final systematisation. Indirectly they form at present the only serious support of the absolute spirit; support far more prejudicial to the true economy of our intellectual forces than that of metaphysical schools the more direct illusions of which are generally discredited. Strange as the inversion may appear, the new Subjective Method is now in reality more relative than the old Objective Method, which henceforth will have to borrow from it a quality which it originally supplied. And the scientific aberrations of Cosmology as now studied are but too analogous to its logical errors. Its essential principles are being gradually superseded by puerile and incoherent researches suggested by conceptions of an anti-positive character; and are in danger of wholly disappearing in the anarchy thus created. Here it is that we find Atheism properly so called; a principle, as I have explained in the General View, more hostile to true Philosophy than any other phase of the theological spirit. Here too it is that Materialism finds its chief intellectual stronghold; although

it is in Biology that its moral dangers are more sensibly experienced. It is in Cosmology then that Positive Religion has the greatest clearance to make; the most difficult and yet the most necessary corrections to introduce. Biology, less dispersive in its nature, more closely related to Humanity, and founded more recently and under wiser philosophical guidance, stands in less need of this wholesome control; although its regeneration involves consequences of even greater logical and scientific importance.

But the serious difficulties attendant on the application of the Subjective Method to Cosmology only make the importance of such procedure more obvious. It is essential to show that the first foundations of true religion are obtained from subjects which at first sight seem wholly alien to it. The action of these studies upon philosophy has been hitherto essentially negative. And yet they have features which, as must now be shown, qualify them to fill a most important place in the ultimate Synthesis of Positive Doctrine.

Division of Cosmology into celestial and terrestrial; i.e. laws accessible, and laws inaccessible, to human intervention.

Our world properly so called, that is to say the total sum of inorganic objects with which Humanity is concerned, exhibits broadly speaking two series of phenomena, quite distinct in character. There are phenomena which are wholly inaccessible to human intervention; there are others which are more or less within its range. Hence Cosmology, subjectively considered, falls into two great sciences, differing in their logical character, differing also in their objective features. Phenomena which cannot be modified have necessarily more independence and more generality than all others; the existence of these others being always conditional upon their own. Thus the classification indicated by the subjective point of view is identical with the objective division of science which formed the guiding principle of my Positive Philosophy.

In defining the scope of these two inorganic sciences, it may be remarked that they are both occupied with one common object, the Earth. The first explains its general relations with the other heavenly bodies; the second deals with the Earth itself specially. The distinction exists already in the two positive meanings of the word *World*. We shall therefore speak for the future of the two divisions of our subject under the terms of Celestial and Terrestrial Cosmology. The latter must be regarded as subordinate to the former, on the same

principle on which Social Philosophy is subordinate to Natural Philosophy, and on which Biology is subordinate to Cosmology.

Philosophical characteristics of each.

Logically, the difference between these two inorganic sciences is analogous in character. For those phenomena which it is beyond our power to modify can only be examined by simple inspection; whereas in the case of other phenomena we have the additional instrument of Experiment. The former being more simple are investigated principally by deductive methods, although induction has more to do with them than is generally supposed. Modifiable phenomena on the contrary, being more complicated and varied, require the more constant use of the inductive mode.

There is a difference also in their broad philosophical results; which affect Order more especially in the first science, Progress in the second. The contemplation of immodifiable phenomena implants in mankind and in the individual the first systematic notion of the Natural Order; the laws of which are at once easier to grasp and more difficult to ignore in this field than elsewhere. The conception of material Progress on the other hand is not furthered by it. The sciences of Mathematics or Astronomy, though more perfect, and with a wider and more definite range of prevision, can yet only serve to adapt our life more perfectly to the fatalities revealed by them; to ameliorate these fatalities is beyond their scope. It is in the study of the modifiable phenomena that we arrive at the conception of that continuous action on the external Order in which the material Progress of Humanity consists. Consequently the physico-chemical arts, depending as they do for the most part on Terrestrial Cosmology, are more varied, more highly developed, and in the end more important than those connected with mathematical and astronomical science.

Religious aspects.

Comparing them from the religious point of view, we shall find the more general and simpler science to be the first in importance, as it was first in order of discovery. It is in those phenomena which lie beyond the reach of human intervention that the mind and the heart begin their training in the practice of habitual submission, enforced by inevitable necessity. The result is to check the instincts of pride and vanity, and also directly to strengthen the social instincts, by the consciousness of fatalities common to all. Yet great as is the religious efficacy of celestial cosmology in all these respects, there is a

want felt which it is for the terrestrial science to supply. Otherwise the consequence would be an immediate and systematic tendency to Fatalism. By extending the habitual conception of an External Order from the field of astronomy to that of chemistry, we not merely develop, but improve the conception. For we show that the property of resistless fatality, so far from being, as at first appeared, one of its essential features, is excluded quite as much by intellectual as by moral considerations. In a word, the one branch of cosmological study inspires us with Resignation: the other with Energy.

CELESTIAL COSMOLOGY, pp. 373–415.

With these brief remarks we may proceed at once to the subject of Celestial Cosmology.

Division into abstract and concrete aspect: Mathematics and Astronomy.

This branch of science embraces the simplest and most general laws of inorganic existence; being limited to the elementary phenomena of Extension and Motion, without which no object can be cognised by man. On these all other phenomena, even the very highest, depend; themselves being entirely independent of all. But this first stage in the scale of existence may be studied in two very different modes, which for the present may be considered respectively as Abstract and Concrete. We may, in the first place, regard these phenomena as attributes common to all objects from the highest to the lowest, abstracting from our view the other phenomena combined with them. Or in the second place these elementary phenomena of Geometry and Mechanics may be studied in those bodies which exhibit them isolated from all others, for the reason that, being remote, they are accessible solely to the sense of sight. Hence we have a division of Celestial Cosmology into two primary sciences; Abstract Cosmology, or Mathematics; Concrete Cosmology, or Astronomy.

The distinction seems less real than that between the other steps of the scientific hierarchy, because these sciences deal in fact with the same elementary phenomena: the only difference being in the objects investigated, and the aspects under which they are regarded. But the subjective point of view removes the difficulty, by indicating the superiority of the first science in independence. Astronomy is necessarily subordinate, since without Mathematics, it would have no rational basis.

MATHEMATICS, pp. 373–403.

In fact, although Mathematical phenomena are the simplest of all, their complete independence of all others deprives the

student of that deductive assistance which, in the case of the higher sciences, is derived from their subordination to the higher. Consequently even Geometry, a science still less complicated than Mechanics, could never have arisen, had attention been given exclusively to celestial phenomena, although ultimately these form its principal field. A long course of preparation is necessary, consisting in the abstract study of simpler and more definite figures, mostly ideal, rendering both inductive and deductive processes more possible. Geometry, besides, is applicable to many other useful though less important subjects, as its very name indicates. Further, when isolated from Astronomy, it includes forms appreciable by Touch as well as by Sight, thus constituting the principal science for those who are deprived of the sense of Vision. For our first mathematical investigations, as Diderot clearly proved, are assisted by the simple use of these two senses to a far greater extent than is generally admitted.

Intellectual and moral value of Mathematics.

The logical grounds therefore for this division are even stronger than the scientific grounds. Without it the growth of the Positive spirit would have been arrested in the germ. The separation of Mathematics from Astronomy was essential for the development of the former, which for a long time pursued its isolated course independently of any other, and indeed supplied all the higher sciences with a systematic starting-point. Its etymology will always remind us that whether in the training of the individual or of the race it stands out as the natural type of the true philosophic spirit, limited in its origin to the simplest speculations. In the formation of Positive Logic, regarded intellectually, this science will always play the most important part. For Logic must in the first instance deal principally with deduction. Induction will be developed subsequently by the study of terrestrial phenomena: but in mathematics it is so simple that it fails to concentrate attention. Philosophically this science instils our first notions of Order and Harmony; although these become more prominent in its application to the phenomena of the heavens. But the religious influence even of pure mathematics is of the highest importance, although concealed in the present day by the ruinous confusion into which the academic spirit has thrown it. By systematising the notion of Proof in its most unquestionable form, it forces the most rebellious minds to submit to the salutary yoke of

demonstrated truth, and implants convictions which no storm of passion can subvert. It is the first mode in which the Intellect subserves the great purpose of the final Religion, the subordination of self-love to social feeling. Neutralised as this result is at present by foolish exultation in insignificant discoveries, it will be found of the greatest value when Education is regenerated, and will reconcile the more sympathetic minds with studies which at present inspire them with natural repugnance.

Their present degradation.

Thus it is that Logic in its true religious acceptation indicates the lowest of the sciences as the first systematic groundwork of the final doctrine, and so connects that doctrine with the first rise of scientific enquiry. For the individual, as for the race, mathematics will always supply the earliest nurture to the Positive spirit, which could never have arisen spontaneously except in these simple and universal phenomena. But by the very fact of their independence and historical priority, mathematical studies have always been more or less injured by the incompleteness of our intellectual economy; and by their strange and anomalous disconnection with all other studies. Metaphysical philosophy, while using them as a potent weapon in destroying or modifying theology, has done much to impair their positive character, while giving them a specious semblance of coherence. And what rendered this result more irresistible was the apparently deductive character of this elementary stage of positive reasoning. Even in our time it affords the only shelter that can still be found for the absolute spirit, in the case of thinkers who have confined themselves to this field too exclusively. The only remedy for this unphilosophical tendency lies in the application of Mathematics to Astronomy. Now that the controlling influence of metaphysics has necessarily disappeared, these studies have been pursued in a more and more empirical and anarchical spirit; they have fallen to minds of inferior power, and have become thickly overcharged with worthless investigations and indeed with erroneous principles hiding their fundamental truths from view. To such length has the degeneration gone, that no mathematical student of the present day is able to grasp his science in its integrity; although it is only the first and indirect part of his preparation for the final aim of scientific enquiry. The irrational character of mathematical teaching, and the inability of Geometry to estimate results at their true value, are melancholy indications

to thoughtful minds of the impending ruin with which these fundamental principles are threatened.

But the very excess of the evil indicates and invites the remedy, by discrediting the study, and inducing men of sense to abstain from encouraging it. And the social circumstances of our time favour this mode of treatment. The profoundly immoral spirit called out by the Academical system is becoming patent to all. Men are beginning to see the utter incapacity of these so-called thinkers in dealing with the large questions on which the attention of Western Europe is being every day more concentrated. There is thus a readiness for the discipline which Positivism introduces by giving a systematic form to the studies which furnished the first rudiments of its philosophical system.

Proposed work on the subject.

So urgent is the need of this reconstruction, and so arduous are the difficulties connected with it, that I propose, as I have already mentioned in the last chapters of my Positive Philosophy, to devote a special treatise to the purpose; to be written, should the circumstances of my life permit, after the completion of the present work. I will here briefly indicate the spirit and plan of the proposed work, as well for its intrinsic importance, as because it serves as a type and also as a foundation for similar undertakings in the other cosmological sciences.

Division into Calculus, Geometry, and Mechanics.

The very word *Mathematics* indicates the disconnected manner in which the science has been studied. In reality it includes only three essential subjects; the Calculus, Geometry, and Mechanics; subjects which the ancients instinctively felt to be closely related, though the proof of such relation was reserved for modern times. Putting aside many useless efforts and unwise hopes, we can see that the progress made since the time of Archimedes, great as that is, is yet, after all, as in other subjects, nothing but the development of this original field, the limits of which will never be passed. Comparing these three divisions of mathematical science, we find them forming a sub-series analogous in character to the larger encyclopædic scale; to be ranged according to the varying independence, universality, and simplicity of the phenomena with which they deal. This succession moreover illustrates the historical course of mathematical enquiry, and its gradual tendency towards a more complicated field. The connection between this science and that which follows is to be sought in

Their order follows the general plan of scientific classification.

Geometry and Mechanics. But it originated in speculations connected with Number; the only kind of speculation sufficiently simple to be cultivated spontaneously as an abstract science.

Ideas of Number, being the most universal and most independent of our conceptions, will always form, for the individual as for the race, the first stage of positive investigation. Philosophic minds, in times when it was the only intellectual food available, have found its inductions and analogies of great value in dealing with higher subjects; and chimerical as such applications often were, they do not deserve the disdain of subsequent thinkers. The extreme ease of deduction and verification in arithmetic rendered it the fittest school of positive logic at a time when the theological spirit was in its fullest force. Nor is induction excluded, although the very simplicity of its operations conceals them from view. Indeed, it is in the science of calculation that we have the first glimpse of the fundamental doctrine of sound philosophy, the Invariability of Natural Relations, whether subjective or objective. For, obviously, this truth is taken for granted in the simplest arithmetical operation. We find here, what meets us in every other application of a scientific law, agreement between the mental prevision and the outward result. Now such agreement would be always accidental, and often impossible, unless the mind and the external world were subject to fixed laws, maintaining a constant harmony between them. We have only to imagine the physical world endowed with the attribute of life, and consequently susceptible of indefinite variations, to see that our numerical calculations would in such a case have no constant value. Still more obvious is the necessity for regularity in the workings of the mind itself. The uncontrolled liberty which metaphysicians have dreamed of would be wholly incompatible with such calculations. Scientific prevision, be it in the humblest sphere, involves the conception of definite Laws, in the mind and in the outer world, as opposed to the arbitrary Wills imagined previously. Thus it is that the science of Number calls out the first systematic notion not merely of logical laws but of physical laws also, although the reasoning process involved seems of so purely abstract a kind. And we find daily confirmation of this truth in the observation of individual development.

Reasons for studying Calculus in combination with Geometry.

The natural procedure of mathematical enquiry, whether in education or in historical development, appears then to be satisfactorily established. It originates in Arithmetic; it is matured in Geometry, its principal field; and ultimately it reaches Mechanics which form its limit. Yet unquestionable as this succession is, it does not warrant us in regarding these departments as three distinct sciences, each presupposing the existence of its predecessor. In my Positive Philosophy I took, it is true, this point of view; wishing to bring the distinction between these subjects prominently forward, and thus to define more clearly the philosophical principles peculiar to each. But the procedure changes now that the preliminary steps in the construction of a true general philosophy have all been taken. That philosophy now reacts upon the special departments of knowledge which prepared the way for it, and gives to each its definite form. Consequently the order of teaching should be rendered more conformable to the order of discovery; which always indicates the essential requirements of the human intellect, whether individual or collective. Otherwise the synthesis of the preliminary sciences would fail to realise its principal object, the guidance of intellectual education.

The application of this principle indicates the wisdom of incorporating the study of Geometry very intimately with that of the Calculus; keeping, however, Mechanics apart, as a distinct body of doctrine to be taught subsequently. It is in the combination of the two first that the essential characteristics of the science are to be found.

The true spirit of mathematical study was never fully understood till the unparalleled genius of Descartes established his admirable adjustment of abstract and concrete conceptions, which previously, notwithstanding occasional points of contact, had little in common. Viewed philosophically, this remarkable discovery was a first step towards the right principle of Classification. It is a perfect type of the subordination in which each science stands to sciences simpler and more general than itself. But it also illustrates what is less obvious but not less important, the reaction of the higher upon the lower studies, and the concentration of these latter upon their essential and immediate purpose. In fact, the subsequent progress, not merely of ge metrical but of algebraical discovery, was directly dependent on this truly fundamental revolution in science. In no other

department of Natural Philosophy can the correlation of two consecutive sciences be so complete or so effective as that between these two first elements, the simplest and the most closely connected of the series. For not merely does Geometry offer an ample field for algebraic operation, a field well calculated to control its natural tendency to indefinite digression; but it furnishes new algebraic conceptions of great value; a proof how much the Logic of Images may do to improve the Logic of Signs. These conceptions may, it is true, be exhibited subsequently in a form independent of Geometry. Yet the wise teacher will in most cases prefer to abide by the historical filiation: a course which develops the true mathematical spirit more surely than rigid adherence to algebraic uniformity. The necessity of combining Geometry with Algebra I have sufficiently enlarged upon elsewhere. The comprehensiveness and the consequent coherence which give its value to modern Geometry would be impossible without such combination. But the study of this, its final and complete stage, should be preceded by a short course of special Geometry as the ancients understood the word.

Both branches having been thus studied in the first instance separately, they will as soon as possible be brought into combined action; they alternately developing algebraic method, and extending the geometric field. This combination, like all others, whether physical or logical, is binary. It does not really include Mechanics, although of great assistance to its progress.

Mechanics to be studied more separately.

Indeed the rational study of Equilibrium and of Motion cannot be carried to any length without constant aid from Algebra and Geometry. And this is the reason why, historically, its progress has been so singularly slow. The science of Mechanics, however, does not exercise a corresponding influence on the growth of Geometry and Algebra. It has stimulated fresh researches, but has not furnished original conceptions. True, an equation might be represented by motion as accurately as by form; but this image would be too complicated, and would have no value logically. In Mathematics we see exemplified the influence which each science can exercise upon that which precedes it, and also the limits of such influence. Its full force can only be felt when the sciences in question are at once simple and closely connected. Sociology alone reacts on every other

department with equal force, being the one link by which our conceptions of truth are held together.

Mechanics therefore must be placed as a whole after the Calculus and Geometry; these latter on the contrary will be combined into a homogeneous body of truth, of which I shall speak afterwards more in detail. Ill-regulated as mathematical teaching is at present, it tends by the mere force of its historical development towards this arrangement, which my promised work on the subject will state in a more systematic form.

Necessity of restricting mathematical studies, pp. 380-387.

We have thus taken a general view of the field embraced by Mathematical Science. We may now proceed to the logical and scientific features of each component part. But I must first premise a few general observations on the necessity of restricting and guiding the study of the science, in accordance with its proper function in the final constitution of Humanity.

Abuse of Algebra.

The co-ordinating principle of Descartes, organising the relation between the abstract and the concrete, gave a greater impulse to mathematical science than all that had been done in previous ages. But the vast results of this discovery were soon impaired by the scientific anarchy simultaneously produced by the disruption of the old systems of thought. Meanwhile the increasing popularity of the study, and the liberal rewards offered, drove true students more and more out of the field, and encouraged an inferior class of men whose devotion to science was often nothing but a cloak for stolid conceit or base cupidity. And besides, these interested motives gradually tended to render the science a mere mechanical process, owing to a wrong conception of the great results due to the Calculus. Geometry, properly so-called, the principal mathematical field, since it is the object of the Calculus and the basis of Mechanics, has been overcharged with algebraic speculation pushed on blindly and recognising no limit. Still, so long as mathematicians were engaged in the study of Astronomical Mechanics, there was some check to these digressions in the utility of the purpose pursued. But since this field has been exhausted, the title of Geometer has been generally usurped by mere algebraists who have never thought out any great geometrical question. So far from subordinating the Calculus to Geometry and Mechanics, the present tendency is to regard these two sciences simply as occasions for facile analytical display, in which signs are accepted very often as a substitute for ideas.

Thus it is that owing to the utter want of philosophical discipline the elementary basis on which our system of scientific truth rests has been deeply undermined. The irrational approval given to the so-called Calculus of Chances is enough to convince all men of sense how injurious to science this absence of control has been. Strange indeed would be the degeneration if the science of Calculation, the field in which the fundamental dogma of the invariability of Law first took its rise, were to end its long course of progress in speculations which involve the hypothesis of the entire absence of Law. And the inconsistency is the more amazing that the phenomena in question are not even brought back to the ancient hypothesis of arbitrary Wills. They belong to no system whatsoever except the academic system. The idlest discussions of mediæval schoolmen contain probably nothing so hollow, or indeed so absurd, as the accepted notions of modern algebraists upon the measurement of probabilities, nay of expectations. And other portions of the mathematical field are hardly less encumbered with childish speculations and erroneous principles; the exercise of thought involved being certainly less profitable than that given by ordinary riddles. It is hard to imagine, for example, a more degrading abuse of intellectual force than the efforts expended in the computation of useless integrals when the computation is inapplicable to any other limits than those arbitrarily fixed in the problem.

Neglect of inductive studies.

And the logical evils of the Academic system are in exact correspondence with the scientific. It has most seriously impaired the invaluable quality always recognised in Mathematical studies, of being the original source of sound philosophical method. Analysis, which Descartes principally valued as a most powerful instrument of Generalisation, is now stimulating a paltry spirit of detail which tends to make all large views impossible. Algebra has been allowed to encroach, till true Mathematical reasoning, which should exhibit the germs of all the logical processes imagined to be peculiar to the higher sciences, is overladen with unmeaning jargon and blind mechanism. A farther consequence is a sort of reaction towards the metaphysical stage: an involuntary tendency to bring back the absolute spirit in the subjects which were the first to become free from it. The habitual use of deductive methods entirely effaces the important part played by induction, so powerful an

instrument in the hands of Descartes. Consequently the fundamental notions of Geometry and of Mechanics are regarded in a far less philosophical spirit than was the case in the seventeenth century, before the encroachments of analysis. Even in Algebra, all conceptions requiring breadth of view have already undergone decay. The important doctrine of series, so successfully elaborated by Euler and Lagrange, is now entirely spoilt by irrational scruples which nullify its analytical value, and which are caused mainly by unscientific confusion between arithmetic and algebra.

Moral danger of Mathematics studied in this spirit.

Moreover, to estimate the real harm done by this want of mathematical discipline, we must remember that the intellectual mischief, logical or scientific, always involves very serious moral danger. The Academic system narrows the mind and blights the imagination; but its tendency to dwarf the sympathies and degrade the character is even more certain. In Western nations that have escaped the Protestant movement and have therefore preserved the moral culture of the Middle Ages intact, these injurious tendencies of mathematical study have been instinctively perceived and checked by the public, especially by Spanish women. Recognising the ground for such antipathy, Positivism explains and at the same time limits it; showing that it does not really attach to the science in itself, but to the degenerate spirit in which it is at present studied. The principal source of this moral danger is indeed to be traced to the same error which has led to the intellectual results above described: the encroachment of Algebra upon Geometry.

Intellectual errors usually have some connection, as most are aware, with moral deficiency; they are at least strengthened by it even when it does not produce them. This empirical truth, for which the true theory of human nature supplies a ready explanation, is strikingly confirmed by the case before us. The claims of modern algebraists to control the whole field, not of mathematics only but of natural philosophy, without themselves advancing beyond the simplest of its elements, is due to something besides their incompetence to deal with the higher branches of study. It springs mainly from unconscious self-complacency, gratified by the cheap credit which their work still obtains, though less lavishly than before, from an ignorant public. Whatever their mental mediocrity, yet, were their motives pure, they would either frankly abandon a career for

which they are unfitted, or else concentrate their forces willingly upon more urgent problems. It is necessary for the sciences to be studied, in the first instance, independently. But this preliminary study should be carried out in each case only so far as is necessary to enable the intellect to take a solid grasp of the science next above it in the scale, and thus to rise to the systematic study of Humanity, its only permanent field. This is the true rule for the introductory scientific synthesis. Its proof was reserved for our own time, but it was always instinctively recognised by the great elaborators of this preparatory work, which therefore was not less grateful to them on moral than on intellectual grounds. We find distinct indications of this honourable feeling in most of the men of science so admirably appreciated by Fontenelle, and even in those criticised by Condorcet. The humblest of them were proud of co-operating in the great mission of modern science as indicated by Descartes and Bacon; the formation of a sound philosophical system as the necessary condition of true social reconstruction. Now that sufficient preparation has been made, that the philosophical system has been formed, and the circumstances of Western Europe call urgently for its application, every tendency to supersede the higher branches of study by the lower should be condemned as morally culpable no less than as a proof of intellectual weakness.

Controlling principle; each science to be studied sufficiently for the requirements of that which stands next above it in the scale.

Viewed under this its most important aspect, the abuse of the Calculus in Mathematics is really the first special phase of the philosophic error called Materialism, previously explained in the General View. The encroachment of Geometry upon Physics, of Physics upon Chemistry, of Chemistry upon Biology, are all developments of one and the same erroneous principle, which can only be radically cured by attacking it in its hidden germ. Everywhere it is the same abuse of the legitimate deductive influence exercised by each of the preliminary sciences, in virtue of its greater independence and generality, upon that which succeeds it.

This final view of the subject shows at once the extreme importance and the proper source of the corrective here proposed in mathematical science. Connected with the highest philosophical problems and the most urgent social requirements, it can only spring from the discipline imposed by the Religion of Humanity in every department of thought. The final

Sociology the final science, should control all.

science, resting on the combined results of the preliminary sciences, is threatened by all of them with encroachments analogous to that which each has suffered from the one below it. The means of resistance are, however, in this case obvious. The difficulty and importance of the problems considered are such that the insufficiency of deductive principles, useful as they unquestionably are, is evident. Sociology, therefore, while recognising the value of each preparatory science, must reserve to itself the systematic appreciation and application of these truths. In this way we shall successfully avoid the crudities of Materialism, without any tendency to the unrealities of Spiritualism. The alternate stagnation and anarchy under which Natural Philosophy has been labouring, both logically and scientifically, will cease when it comes to be recognised as an universal principle, that each science should regulate the mode of application of the preceding science to its own field of enquiry. By tracing this principle to its true Sociological source, we increase the effect of its verification in all other departments. Besides, we bring in Sympathy to the aid of Reason. Intellectual scruples vanish before the urgent moral and social requirements that render this economy of mental force necessary. We have here a new and striking example of the intimate correlation shown in the preceding chapter between the Logic of the Heart and the Logic of the Intellect.

The general result is that the application of the Calculus to geometrical and mechanical questions should be entrusted henceforth to geometers; excluding mere algebraists, and confining the Calculus to what is really necessary for this purpose. And yet we should have the same error springing up in another form if geometers in their turn were to become exclusive, instead of regarding their own science as a mere preparation for that which follows. And thus step by step we reach the conclusion that men of genuinely philosophic nature, whose lives are entirely devoted to the religious service of Humanity, are the only men who can study even the preliminary sciences in a wise spirit. Their present mode of culture by academic specialists must be entirely abandoned. Then, and not till then, shall we be able to subordinate questions of detail to general principles, as good sense and morality alike demand. The reform here recommended is no real innovation. It is merely a reconstruction upon a better basis of the old scientific discipline which during the last two centuries has been for special reasons abandoned.

Such wholesome severity would no doubt lead us to discard the larger number of our present speculations, and would modify nearly all the remainder. But this no true thinker would consider a misfortune. He, like other men, would think it a matter for congratulation that forces at present wasted in digressions useless mentally and morally, or worse than useless, should be concentrated on important problems. Strict adherence to this plan will, it is true, sometimes cause studies of real utility to be neglected, on the ground of their having no relation direct or indirect with the higher subjects. But if we look more closely into these exceptional cases, we shall find that they always hinge upon questions admitting of immediate practical application. We may therefore leave these cases for practical men to deal with. They will best understand the object of the enquiry, and the spirit in which it should be carried out. It will occasionally happen of course that their investigations will necessitate new developments of a more purely theoretical kind.

Exceptional cases may be left to practical men.

The plan of scientific culture here laid down takes for its basis the systematic course of universal education described in the General View. In that system theoretic training is preceded by a course of moral and esthetic culture, the result of which will be to place the Intellect at the call of the moral or the active faculties. Scientific study is not morally praiseworthy except on the ground of its moral or practical results. It exercises no influence upon Feeling comparable to that resulting from poetic culture; the only pursuit which calls out to the full all human powers. Positive Religion then, here as always regarding human life as a whole, will give the fullest sanction to Science, but at the same time will restrict it, in each and all its branches, to its proper scope. In Mathematics in particular, as being the oldest and the most dispersive of all, the sifting process will have to be applied most stringently. Its application in this case will moreover serve as the type of its operation in other instances.

The grounds then for the systematic restriction of each preliminary science to the limits sufficient for that which follows it, will bear the closest examination. For the direct study of any one of those sciences must be simply provisional even with respect to its own special field. Its results cannot be estimated rightly, especially in the case of Mathematics, until its relations

Social statics and dynamics can alone elevate Science to her true rank.

to the higher orders of questions have been examined; since it is only on their larger aspects that the sciences come into contact. Consequently the indispensable stage of preparation should be completed as rapidly as possible, so as to reach the one point of view from which truth can be surveyed under all its aspects. Thus the very dignity of Science itself, when rightly understood, calls for the discipline which Sociology imposes. It is only on entering the subject of Social Statics that we begin to understand the real importance of the subordinate sciences by the light of their mutual relations, which could not previously be perceived. And even then the estimate is incomplete till we reach Social Dynamics, which explains more clearly their historical filiation. It is impossible to understand any science rightly without adequate knowledge of its history. And no special history of a science is possible apart from general history. It follows that no one who is not a Sociologist can have a thorough insight into mathematical science. Even the best geometers have not been able to grasp it as a whole. Lagrange did so more nearly than any other, because his most important results were imbued with the historical spirit as deeply as was possible in his time. It is a striking illustration of this conclusion that no mere astronomer has ever been able to explain why Hipparchus could not discover Kepler's laws. Simple as the question may appear, the Sociologist alone can answer it; for the solution depends on the general mental and social progress of the human race.

Science as degenerate as theology; but, unlike theology, susceptible of regeneration.

These general remarks, which I shall take other occasions to apply, indicate the mode of regenerating this science; removing thus the chilling influence felt at present by all who return to it after concentration upon higher studies. Science in general, and mathematical science especially, has in truth become of late almost as retrograde as theology, and subsequently metaphysics, have been during recent centuries. And it has degenerated morally no less than intellectually. Still, far gone as the mischief is under either aspect, its reparation is possible, nay, certain to be soon accomplished; whereas the decay of theology and metaphysics points to utter and irrevocable dissolution; being in their case the result not merely of accidental aberration, but of gradual and spontaneous exhaustion. Having done their work in controlling the earlier phases in the life of Humanity, their vitality has slowly disappeared. The

degeneration of modern science on the contrary is due solely to misapprehension of its true character and purpose, caused by want of discipline in its study. Its restoration therefore will consist in more adequate recognition of its true spirit, to which those who most abuse it constantly appeal. Amidst all the useless speculations and erroneous conceptions of scientific specialists, principles of the highest value have been evolved, which have now to be incorporated into a body of Natural Philosophy as the necessary basis of Social Philosophy. In a word, empirical as the development of the preliminary sciences has been, it has nevertheless prepared the way for the final science, and through it for the true Religion, which will speedily regenerate each of its component elements.

It would appear at first that such a result was rendered impossible by the close connection of the whole with the parts; each being indispensable to the other. On the one hand we have Sociology depending upon cosmological and biological truths: and on the other hand these latter, as we have just seen, can never be adequately presented except from the Sociological point of view. Consequently the complete synthesis of our conceptions seems hardly capable of reduction to a purely didactic series, in which each term prepares the way for the succeeding without being itself affected by it. From this dilemma there is in fact no escape in Natural Philosophy. Partial constructions, each of which shall be complete and self-contained, are unattainable. The only possible and rational course is a complete Synthesis in which Sociology shall be regarded as the sole Science, based on certain introductory principles relating to the more simple and general phenomena. Each class of these should be restricted to what is necessary for the development of the succeeding, and should in turn regulate the application of that which precedes it. And this rule applies not merely to the general grouping of the preliminary sciences, but also to the internal arrangement of each science separately. Only thus can we reach that continuous and regular progression of which, as already explained in the General View, Positive Education should consist.

Calculus viewed separately.

Applying this observation to Mathematics, we must begin by regarding the Calculus under its two principal aspects of Arithmetic and Algebra, taking these words in their full philosophical meaning. Properly speaking they are but the two

steps which follow in every complete calculation. Before we can compute the amount of the numbers sought for, we have first to state in an explicit form their relation to the numbers given. Indeed it is impossible to separate these two stages distinctly except in questions so simple that the formula can be discovered without any specification of the value. In all other cases the two operations go on with frequent alternation. Yet the distinction between them remains. When the operation has to do with Value it is arithmetical: when it has to do with Relation, algebraical.

The arithmetical calculus stands alone when the question is so simple that the algebraic process can be performed spontaneously without requiring any special rules. But as problems become more complicated, this the first of the two processes requires the greater effort. The subsequent computation of value on the contrary is reducible to a short list of elementary cases; their combination adding but little to the arithmetical difficulties, though algebraically it is the chief source of trouble. This is why Algebra plays so large a part in the modern calculus, while that of the ancients was almost limited to Arithmetic. Ultimately, indeed, arithmetical operations may be regarded as mere modifications of certain algebraic processes; but this view in no way affects their distinct character, or their difference of purpose.

But for the existence of Algebra as a separate branch of science, the systematisation of mathematical truth would be impossible. For the key to this systematisation is the correlation between the abstract and concrete which Algebra first indicates. In fact, so long as the Calculus remains purely arithmetical, there can be no application of it to Geometry. Arithmetic dealing only with special values, can serve merely to express the final result of the geometric process. Operations on number cannot be substituted for operations on form, unless the quantities considered be indeterminate. Hence Algebra, both historically and in education, has a second source in Geometry; and one even more obvious than Arithmetic. Definite relations come before us here at once, especially in the form of proportions; the abstract study of which soon became a distinct branch of study with the Greek geometers, as a very potent instrument of concrete deduction. As this artificial logic developed itself, it was simplified and generalised

by the substitution of indeterminate number for magnitude; withholding all indication of form, which could only tend to embarrass and limit its operations.

Geometry viewed separately.

From this, the abstract side of mathematical science, we pass to the concrete side, reached later and with greater difficulty. Its combination with the abstract, first discovered by Descartes, is, broadly speaking, the foundation of the mathematical synthesis; consisting in the development of general Geometry out of the special Geometry which alone was known to the ancients.

For some time Geometry could do nothing but examine separately a few very simple forms, whether naturally existing, or, as afterwards, of artificial creation. But it was not long before the principal questions suggested by each figure were seen to be uniform in character. In the most important of these questions, that relating to the scientific measurement of extension, the uniformity is obvious. In each case the object was to reduce the comparisons of lengths, areas, or volumes, to the simple comparison of straight lines. But the resemblance became apparent subsequently in the special study of the properties of each figure. Different as the results might be, the investigations themselves were evidently analogous; and as the number of geometrical figures increased, the similarity of the problems contrasted strongly with the speciality of the solutions. Each curve involved a separate study, which was of no avail to the study of any other except as a logical exercise; although the problems suggested might be in both cases the same. It was not possible to grasp and treat distinctly that part of each problem which was common to them all.

This first stage of geometric science involving researches of far too restricted a character, tended to multiply useless investigations, the danger to which all intellectual effort is ever liable. Still more evident was its failure to meet our practical requirements. There was nothing to insure that the small number of figures chosen could lead ultimately to useful results. Nor were they selected with this view, but simply because their relation to forms previously investigated brought them within the range of scientific treatment. Had utility been kept in view, and the figures selected been those presented in practical life, the problem would usually have transcended the degree of knowledge then attained. Often indeed the figure itself would

not have been easy to define, especially in the case of astronomy, the principal field to which abstract Geometry is applied.

Whether then we regard the nature or the purpose of this science, we see the necessity of giving it a perfectly general character. The speciality of its earlier days is wholly incompatible with its normal state. Instead of a limited number of isolated types, it must include all forms capable of strict definition; treating in a uniform method the various questions common to them all, and dealing, not with separate objects but with separate subjects of enquiry. Thus the generality presented in the principal problems will be completely paralleled by the generalities attained in the methods of solution. Rational Geometry will be condensed into a small number of theories universally applicable, from which the special treatment of each case can always be deduced. This therefore may be left until practically wanted, a conclusion enabling us to reject a mass of idle speculations. And at the same time the correspondence of theory with the wants of practical life becomes no longer fortuitous but certain. We are sure beforehand that every figure which presents itself can be dealt with by theories which apply equally to every form whatever. The only special difficulty is one of a secondary kind; the recognition, or if necessary the formation, of the abstract type applicable to each concrete problem.

Combination of abstract and concrete aspect in Cartesian geometry.

Geometry, in this its normal state, is due to the unparalleled genius of Descartes, whose great principle of correlating lines with equations converted all the conceptions of Geometry into truths of Algebra. Although the source of all subsequent mathematical progress, this admirable discovery has not yet been estimated at its proper value as the greatest scientific effort of the human mind.

To co-ordinate Geometry by subjects instead of by objects, implied uniform definitions of these latter that should admit of easy generalisation. And this was done by substituting the equation of each figure for the figure itself. The result exhibits in its highest degree the logical power of Algebra in all questions capable of being transformed into questions of number.

All phenomena might be represented by equations, but for the practical difficulties.

Metaphysical subtleties as to quality and quantity notwithstanding, all phenomena, however complicated, admit in principle of this transformation, were it only possible to realise it. The geometric notions of form and position have intrinsi-

cally no closer connection with numerical notions than any other scientific truths; we may therefore legitimately conceive the same transformation carried out in every other science. And Algebra would thus become a sort of universal logic, did not the impossibility of attaining such a result restrict this mathematical utopia within very narrow limits. All phenomena, even those of Social organisation, would certainly have their equations of form or motion, if their laws could become known to us with sufficient precision. This manner of regarding mathematical truth is in fact a necessary consequence of the fundamental dogma of Positivism: the Invariability of Natural Relations. Geometricians are only wrong philosophically in so far as they ignore the practical conditions, whether objective or subjective, which make it impossible to apply mathematical methods except in phenomena of the simplest order. The failure may arise from either of two causes; the precise laws of the phenomena, that is to say in mathematical language their equations, may be too complicated to deal with; or we may be unable to discover these laws at all. In most phenomena, even those of the inorganic world, both obstacles co-exist; so that this perfection of logical method is hopeless except in the most elementary branches of science. The conception then of Algebra as a universal storehouse of deductions and inductions, ready-made and applicable to all possible problems, must once for all be abandoned. The result of all recent attempts is to corroborate the view of the great philosopher who first used this logic, that geometry is with few exceptions the limit of its application.

Within this field the superior rationality of Algebra, so long as it continues to aid the elucidation of concrete questions, offers immense advantages. Its value is commonly thought to be deductive only; and deduction is unquestionably facilitated by its condensation of language and consequent simplification of ideas. But the influence of Algebra is even deeper and more beneficial in geometrical induction; and this was the aspect which attracted, and with good reason, the attention of Descartes. The great advantage of transforming figures into equations was that it facilitated the generalisation of concrete problems. It enabled us to grasp and follow out that part of each subject of enquiry which was common to all the objects that could possibly be considered; this abstract part of the question being in fact the connecting link between different

problems. Thus, and only thus, could Geometry become in the true sense general. Monge, carrying the same philosophical principle a step further, added the fertile method of comparisons. He was the first to classify surfaces by means of collective equations, thus completing the constitution of the science, which now needed nothing but to be put into a systematic form.

So close a correlation of Algebra and Geometry could not but react favourably on the former science, and should ere now have resulted in its final incorporation in Geometry, the central region of the true mathematical field. Up to the present time, however, this tendency has been neutralised by the want of scientific discipline. The independent value of the Calculus has been maintained, and indeed much exaggerated, on the ground mainly of its claim to logical universality. But long experience, no less than sound philosophy, points to the complete rejection of these ambitious illusions. Apart from its numerical utility the Calculus should now be regarded not as a science in the true sense, but simply as a method; its object being to assist geometrical investigation, from which it ought never to be dissociated. Viewed thus, the Calculus will occupy a position of real dignity in exchange for its lofty but puerile claims to isolated existence. The salutary discipline imposed on it will check useless digressions, which, the more abstract our studies become, are the more difficult to avoid.

To avoid, then, increasing the natural disadvantages of abstraction beyond what true generality of investigation necessitates, the Calculus should be systematically reunited to Geometry, and be regarded as its principal method of research. In teaching it the order followed should be that of the problems dealt with, the order in fact of historical discovery. Such at least is the general spirit of the mathematical teaching given by Positivism. A preliminary study of the Calculus will no doubt be necessary for the individual as it was for the race. But this will be carefully confined to the limits required for its most elementary application to Geometry, all ulterior steps being regulated by the development of the latter science.

Transcendental analysis.

Of these more advanced phases I shall here speak only of the most important, the discovery of transcendental analysis, which completes the systematisation of mathematical science.

Wallis.

It followed as a necessary consequence of General Geometry,

which without it would have been of but little value. The Cartesian revolution was available for none but the simplest problems so long as the Calculus retained its old character. In this stage it is only adapted to preparatory rather than essential questions, relating to the properties of each figure, or to its modes of generation. Numerous as these problems are, in consequence of their almost infinite diversity, they are not the most important. Far the larger part of the geometric field is occupied by the more comprehensive processes relating to rectification, quadrature, and cubature. Accordingly, Wallis, the first of Descartes' mathematical disciples, occupied himself specially with investigations of this kind, in which the transformation of concrete questions into an abstract form was at once more natural and more useful. His well-directed attempts soon showed that the new geometry required a new calculus, for which indeed they laid down the foundations.

Leibnitz.

The condition wanting for the discovery of Leibnitz was a proper application of the conception of Descartes to the old geometry of Archimedes, consisting in reduction of curves to their rectilinear elements. The attempt to use the Calculus in generalising these special theories of the ancients soon led to the substitution in equations of these simpler elements for the more complicated original magnitudes. Not only were the abstract relations rendered thus more easy to conceive and elaborate, but they offered at once all the generality that could be wished for. These auxiliary elements were naturally uniform in character; they retained nothing of the special details of their object, and related exclusively to the common subject of enquiry. Their introduction with the view of reducing complex to simple problems, is the characteristic feature of the transcendental method. Its generalisation in modern times required the construction of an elaborate calculus containing rules for the ultimate elimination of these artificial magnitudes.

Thus the revolution effected by Leibnitz in Algebra should be regarded as the necessary consequence and completion of the revolution effected by Descartes in Geometry. In mathematical teaching this historical filiation should be very clearly marked, as can only be done by the sociological method. Such teaching should in fact be so arranged as naturally to exhibit the way in which the various requirements of geometry have involved, and in many cases have suggested, the principal steps of this transcendental analysis.

Importance of studying methods in combination with doctrines.

The incorporation of the Calculus in Geometry is then as essential to the right presentation of the former as of the latter. As it is the only mode in which to generalise and co-ordinate our concrete theories, so too it is the only way in which a satisfactory check can be placed on the vague and indefinite tendency towards abstract speculations. In the intellectual anarchy that prevails at present there is a tendency to prolong the absolute and metaphysical system by encouraging the study of logic apart from science. But it is always most desirable to combine the study of methods with that of the truths attained by them: both having the same historical sources. This rule is a matter of morality no less than of good sense; but it will never be respected if the first step in scientific education is to infringe it by separating the Calculus from Geometry. It is precisely in this primary department of science that its rigorous observance is most needed. Without such a check the mind of the individual would be exposed to the dangerous errors in which the race was involved before him, when the Calculus existed as a separate branch of science. The old delusions as to the magic power of numbers and signs handed down to us from the Jewish Cabbala, are at the present moment tending to reproduce themselves in mathematical teaching in consequence of this mistaken separation. Such errors are far less excusable in modern times than in antiquity; and indeed are more mischievous morally and intellectually, now that the intimate harmony established between the abstract and the concrete facilitates and indeed indicates their avoidance. They spring now from nothing but undisciplined folly, inspired or strengthened by vanity and self-interest.

In this incorporation of the Calculus into Geometry there is only one real disadvantage. The perfect generality which is the distinctive feature of Algebra seems concealed by it. Algebra is applicable to Mechanics as well as to Geometry, though in a far less degree. However, when the hopeless impossibility of rendering Algebra universally applicable is once fully recognised, its study can easily be regulated so as to meet to a great extent this solitary defect in a mode of teaching otherwise so desirable. All that is necessary is to point out in the explanation of each abstract method the full range of its application, before dealing with its special application to the concrete questions which suggested it. Every sensible teacher would

indeed spontaneously comply with such a condition. Besides, when we view this danger more closely, we see how little it is to be feared. Mechanics have never required any special algebraic theories that had not already been suggested by Geometry, or at least which did not at once take their place in geometrical teaching. The Geometrical Calculus then contains really all that is essential in mathematical logic, so that there is no pretext for studying the latter separately, when once we have discarded the academic absurdities which form the principal area of the present confusion.

Mechanics, pp. 395–402.

From this account of the proper mode of arranging mathematical science, based on the incorporation of the Calculus into Geometry, I now pass to what forms the boundary of the mathematical field, the science of Mechanics.

In Geometry we consider the simplest form of passive Existence; in Mechanics, of Existence combined with Activity.

Extension to this limit matures the mathematical spirit, by completing our view of the most general and simplest mode of Existence. In Geometry Existence had been regarded under a purely passive aspect. Yet there is really no such thing as Existence without Activity. It is no doubt indispensable that the static point of view should always precede the dynamic; but the latter must always follow, even in the simplest branch of study. It is by the laws of Motion that our view of the elementary existence of matter becomes complete; the laws of Extension have only introduced the subject. Certainly geometrical phenomena must be regarded as more general and therefore more simple than mechanical phenomena. But the difference is merely one of time; it is not inherent in the objects themselves. In reality mobility is as universal a property of matter as extension. Only, bodies are not always actually in motion; whereas the three geometric attributes, form, magnitude, position, are never wanting. It is quite true that Rest, looked at more closely, is nothing but a state of equilibrium in which a variety of motions exactly neutralise one another. But unquestionable as this conclusion is, it does not efface the main distinction between geometry and mechanics. This condition of equilibrium can be studied with respect to the facts of Extension to which existence is in this case reduced; without any regard to the counterbalancing motions. Geometry is not therefore the same thing as Statics in the ordinary sense. In Statics the laws of this neutralisation of motions form the subject-matter; we disregard the

form of the body, except so far as this may influence the conditions of equilibrium. Dynamics form, however, the essential feature of Mechanics, since equilibrium itself always involves motion. Geometry on the other hand is necessarily statical in character, although it constantly takes motion into consideration; doing so, however, only to render its conceptions more distinct. Thus these two sciences may be regarded finally as embracing the two most general and elementary aspects of the study of matter; the first having reference to its Existence, the second to its Activity. The terms of Statical and Dynamical Mathematics might with propriety be employed, provided that these words were used in the exact sense which since the publication of my philosophical treatise thinkers have agreed to attribute to them.

These remarks show very clearly how far mathematical science was from its true state in ancient times. They had no conception of Dynamics: the most elementary laws of Motion being all unknown to them. The science of Statics Archimedes was able to found. His marvellous genius, equally adapted for induction or deduction, grasped the true conditions of equilibrium in a special case of great simplicity and yet most fertile in results. But, although the moderns have frequently followed in his track with principles of far wider range, they have never been able to frame a general theory of Equilibrium independently of the study of Motion. The attempts still made to separate them have reference rather to teaching than to the method of research. They are as contrary, however, to wise principles of arrangement as to the historical order of discovery; springing in reality from the quasi-metaphysical spirit with which the abuse of the Calculus has penetrated Mechanics even more deeply than Geometry.

Intimate connection of Statics with Dynamics.

But from the nature of the science this vain conceit of the algebraists has always been to a great extent checked. Faulty as the mode of studying it may be, the feeling that its object is the discovery of physical laws, on the basis of the logical laws previously investigated, has always prevailed. These laws cannot indeed be separated, since they involve each other. We have already proved their co-existence in the most crucial instance; namely, in the Calculus itself, in spite of its pretensions to be a product of the pure Reason. There is, however, a real difference in the dominant philosophical tendency of

different departments of science. Statical questions are more nearly concerned with logical laws, dynamical with physical laws. Accordingly, Geometry, which studies Existence solely, brings intellectual or subjective laws into prominence: whilst the laws revealed by Mechanics, dealing with Activity, are for the most part material, or objective. Thus the correlation between these two component portions of mathematical science, in which matter is studied under its two elementary aspects, presents the first systematic conception of natural laws: showing them to be at once logical and physical. Thinkers the most opposed to positive science can hardly fail to recognise the extreme importance, even from the moral aspect, of this basis of intellectual training. It gives to the great and sacred principle of Order a coherence which nothing can destroy.

The great philosophical services which Mechanics have rendered to the human mind are then rather scientific than logical. The methods employed are at bottom identical with those of Geometry; no fresh artifices of importance, whether deductive or inductive, are introduced. The reasoning process being easier in Geometry, it is better able to supply that logical training which results from modes of procedure followed in either science alike.

Abstraction in Mechanics. Inertia.

Mechanical Science as a whole affords, however, an intellectual exercise of very great value. It educates the faculty of Abstraction, indispensable to all positive generalisation. In Geometry the formation of abstractions was too easy to require systematic effort. Even the institution of *Space*, which enables us to study Extension without reference to any real object, is so spontaneous that its origin, whether in the individual or in the race, is undiscernible. The absolute perfection of its types also, which is the other basis of geometrical reasoning, springs from a very natural tendency. In every reasoning process the mind forms ideal limits for its own guidance. The difficulties which they cause when we have at last to pass from the abstract to the concrete are usually slight in Geometry; except in astronomical questions, where the necessary approximations are not so easy to arrive at.

Analogous difficulties, still greater in degree, present themselves in Mechanical Science, as to the exact statical relations of the bodies under examination. We have to regard their form as being either constant, or as uniform in its variations:

and this is even a greater departure from nature than the supposition of a perfectly straight line. But this is not the principal difficulty that meets us in the formation of Abstract Mechanics, nor is it the source of the perplexity and confusion almost always experienced in its application to the Concrete. It is in the Dynamic relations of bodies that the greatest difficulties arise; because we have to put entirely out of sight their spontaneous activity before generalisation of any kind is possible. Rational Mechanics rest altogether upon the artificial conception of *Inertia*. It occupies the same place in this science as *Space* in Geometry, although it is a notion far less obvious. The difficulty of grasping it is the principal reason why the laws of Motion were discovered so far more slowly than the laws of Extension. Even now this conception, the logical basis of the science, is enveloped in thick metaphysical clouds, especially since the sophistries of the algebraists have made such inroads.

Subject-matter of Mechanics. Composition of Motions.

The nature of this science indicates at once the true method of arranging it. It consists in the composition, or in other cases, the decomposition of motions. In this fundamental problem there are two distinct questions, differing materially in difficulty. We may consider either an isolated body, or several bodies more or less connected. In the first case, if the motion of all points of the body be identical, so that we may confine our attention to one of them, what is sought is the total motion resulting from the coexistence of several given motions. In the second case, the motion of a given body or point being determined, we have to discuss the modifications resulting from its connection with the rest of the system. Supposing this connection to be of the simplest and most manageable kind, that in which the relation of all the points is invariable, the difference between the two cases is that between Translation and Rotation.

Whatever difficulties the two aspects of this department of mathematics may offer, yet the possibility of defining its object so succinctly is enough to show that the field is far less extensive than that of geometry, which, simpler though its principles be, could not be defined in the same way. Its general condition then ought to be much more satisfactory; logical and scientific unity of purpose being less disguised by dispersive specialities. In spite of our intellectual anarchy, the series of efforts, possibly

somewhat overstrained, made during the last century to systematise mechanical science, is most remarkable; the unparalleled construction of Lagrange being the most signal example.

Bases of the Science. 1. Logical artifice of Inertia.

Freeing ourselves from algebraical prejudices, we shall find two principles, the one logical, the other physical, forming the basis of Mechanics, and correlated in a way that has now to be considered.

The first is the artificial conception of Inertia, without which no generalisation even of the simplest mechanical facts would be possible. Its justification is that we are not now investigating the sources of motion, but the mode in which it takes place. Hence we are warranted in replacing the spontaneous activity of the body considered, whether organic or inorganic, by a force of equal value acting from without. Thus in dynamical problems we discuss a variety of communicated motions, without ever thinking of the reacting influences that the body may exercise by its own internal forces. Only in the application of these general theories to a special case we have to include this spontaneous action as one of the forces to be considered.

To this great logical artifice the science of Rational Mechanics owes at once its universality in the abstract, and its shortcomings in concrete application. Limited to the external facts of motion, from whatever source originating, it embraces all possible motors, including vital organisms, notwithstanding the sophisms of certain biologists on this subject. But hence too spring the profound difficulties of applying mechanical theory to practice. In passing from the abstract to the concrete, we have to take into consideration the internal conditions which previously had been left out of sight, and to range them among the other external forces. It is only in the simplest cases of inorganic science, in astronomy for instance, that we are able to do this: and even in astronomy the algebraic difficulties thus created are immense.

2. The three laws of Motion.

This then is the logical basis of Rational Mechanics. Its physical basis, the starting-point of the elementary theories of the science, consists in the three laws of Motion, discovered respectively by Kepler, Galileo, and Newton. These men were the first to give a right interpretation of the very simple facts in which these laws had hitherto lain hidden; men's minds not being as yet prepared for them.

The first law defines simple Motion as being always recti-

linear and uniform, whatever its external source. The second law shows that the special motions of the parts of a system are left wholly undisturbed by a motion common to the whole system. The third law states the constant equality of action and reaction, in whatever way the mutual influence may be exerted.

These laws are evidently irreducible; and combined with the assumption of Inertia, which indeed they presuppose, they form an adequate foundation for all the theories of the Science. The first defines the character of each isolated motion, the two others give the elementary rules by which motion is combined or communicated; these being the two great objects of mechanical problems. There can be no need of any new inductive basis for a science the scope of which is so clearly defined; further advances depend upon a purely intellectual process, consisting in a proper arrangement of the difficulties that present themselves. Lengthy and tortuous as the deductive process may become, its results will always be as real as the point of departure; and will indeed add fresh confirmation of it.

Application of these laws in other subjects.

Independently of the important results, both general and special, thus obtained, these three fundamental laws possess deep philosophical interest. Here for the first time our studies make us directly conscious of the existence of a natural Order. For the Positivist each of these laws is the germ of a still wider principle, embracing all the phenomena of activity, though limited in the first instance to those of motion. Thus Kepler's law is a special case of the law of persistence which obtains throughout nature; being, for example, the source of habit in living organisms, of the conservative instinct in societies. So too the law of Galileo corresponds to a general law reconciling the activity of the parts of a system with the existence of the whole; illustrated in Sociology by the harmonious adjustment of Order and Progress. Newton's law, again, is even more evidently applicable to changes of every sort, provided only that we measure the special actions and reactions with due accuracy. The complete application of it in Mechanics leads to D'Alembert's well-known principle, which reduces the study of the motion of a system to the study of its equilibrium. And the most complex phenomena similarly treated, admit of the like reduction of dynamical principles to statical principles. Hence the great sociological aphorism on which the whole of this treatise is based; Progress is the development of Order.

With these logical and physical principles, the co-ordination of mechanical science will not be found difficult. The two first laws at once solve the question of translation, so far at least as uniform motion is concerned; the composition of such motions being determined by ordinary geometrical rules. And for the theory of Equilibrium, in which each force can be regarded as a simple impulse, this suffices. In Dynamics, however, it is but the first stage of the enquiry. Here we have to reduce the problem of varied and curvilinear motion, due to continuous actions, to the case of uniform motion; adopting the same transcendental method used in Geometry for reducing the study of curves to that of polygons. So too the case of impeded motion is brought under that of free motion, by regarding the obstacle as a new external force, the intensity of which, varying with its direction, is determined together with the other unknown quantities. Systematisation of the science.

Again, a similar logical artifice, conceived in even a broader spirit, allows us to identify the mechanics of a system with that of a single point; which latter would otherwise be too unreal. Combining the third law of Motion with the two others, we simply have to count the forces springing from the internal constitution of the system among those acting upon it from without. The only problem then remaining is to measure these internal relations; a problem to be solved by the algebraic or geometric conditions which define them. And here Lagrange has established an admirable rule of universal application, which gives the only true interpretation of the celebrated principle of virtual velocities.

The science of Mechanics is thus in a most satisfactory condition as far as regards its fundamental theories; and these in fact form its principal field. Without any forced attempts at uniformity, we feel the essential unity of the subject whether regarded logically or scientifically. The questions treated pass into one another by gradual and almost insensible transitions, as we should expect in a subject which in reality consists of a single problem.

Descending to details we should hardly find this impression confirmed. But it is true nevertheless; special solutions being not at all the purpose for which this science is adapted. Not merely are we met by the difficulties always arising in the attempt to pass from the Abstract to the Concrete; difficulties Limits of its range.

usually insurmountable except in the case of planetary motions, where the resistance of the medium is imperceptible. But even with the forces best known to us, the mere motion of a point leads almost always to insoluble problems. As for systems, even the very simplest, their investigation, statical or dynamical, can only be completed in a few hypothetical cases. Even supposing the relations of the system invariable, it is only the question of Equilibrium that receives full solution. Motion of the system involves the theory of Rotation, which even when confined to forces of impulsion will always remain imperfect.

Yet the true value of Abstract Mechanics remains unaffected by these necessary imperfections. They only show the mistake of expecting from this science a precision in practical solutions for which it is wholly unadapted. What we can expect of it is to supply the general principles of motion and equilibrium: and this office it satisfactorily performs.

And this strengthens our conclusion, the philosophical grounds for which have been previously stated, as to the proper limits of the mathematical spirit. Its principal field will always be Geometry; the only science sufficiently simple to admit of exact deductions in special investigations. As soon as we pass from Extension to Motion we find the weakness of our intellectual faculties and the complexity of the world around us wholly incompatible with the lofty claims to absolute rationality which were natural during the earlier growth of Mathematics. Yet when restricted to its general problems, Abstract Mechanics will continue to be of the highest importance in the systematic training of man's reasoning powers. It connects every department of Natural Philosophy with the first spontaneous inspirations of the scientific spirit. Inadequate as it will always remain for special solutions, it supplies, even in sciences so remote from it as Biology, general indications calculated to suggest the right method of study. The restrictions here imposed on it will of course materially simplify its position in the Positive system of Education; twenty lectures sufficing for it, whereas the other parts of mathematics will require six times that number.

Summary. The first of the five preliminary sciences is now before us in all its completeness. Scientifically the correlation of its truths corresponds exactly to their homogeneity logically, supposing

the proper check on algebraical digression. Its object is the abstract study of the simplest phase of inorganic existence, that is to say, of Extension and Motion. It comprises therefore, in the first place, a preliminary study of the Calculus by itself, strictly limited to what is necessary for its simplest applications to Geometry; secondly, Geometry, its principal field, the special form first, then the general form; the correlation with the Calculus, the transcendent branch of it especially, being always kept in view: thirdly, a supplementary yet necessary branch establishing the general laws of motion and equilibrium, and thus concluding the science. Viewed thus, this first phase of the positive spirit brings already into view every aspect, even the moral aspect, of sound encyclopædic teaching. Developing the conception of logical laws, it opens the first glimpse of physical laws. The field is sufficiently wide to exemplify the mode in which positive theories succeed one another, and the danger of allowing the lower studies to encroach upon the higher. It prepares a deep and firm foundation for systematic teaching of moral truth, by revealing for the first time the Universal Order. Wisely studied, Mathematics are favourable to the just claims of the Heart by ensuring the free submission of the Intellect. The reproach of exercising a deadening influence on morality is applicable merely to the disproportionate or erroneous mode in which they are now being taught.

The foregoing remarks on the systematisation of Mathematical Science will explain my purpose of devoting at some future time a special treatise to the subject. I have been induced to dwell here at greater length upon this preliminary portion of cosmology, both on account of its paramount importance and of the largeness of the field, and also because the mischief done by intellectual anarchy is greater than in any other case. Once effected here, the reconstructing process in the other three inorganic sciences will be more easy and rapid.

Astronomy, the first of these, may be regarded logically as a sort of Concrete Mathematics; but scientifically it must always hold a distinct place in the general system of preliminary studies. Its great importance as an instrument of popular education induced me to deliver a gratuitous course of lectures upon it for seventeen years; the substance of which is contained in my *Philosophic Treatise of Popular Astronomy*, published in 1844. This little work will supply what is wanting

Astronomy, pp. 403–415.

in the very summary view here given of the true arrangement of this, the second of the preliminary sciences.

Scientifically considered, Astronomy can be little else than the application of Mathematical truth to the phenomena of the heavenly bodies. But independently of the importance of such application, the mode in which it is effected gives it, logically, a new character. It is true that we are limited to the consideration of geometric or mechanical phenomena, which have already been reduced to general and abstract theories, by the preceding science. All attempts to outstep this field are necessarily as vain as they are idle, even in a problem so simple as that of temperature. Distant bodies, accessible to no sense but that of vision, will never admit of researches deserving to be called Positive in any other of their phenomena than Extension and Motion. So far as we are concerned, it is in these that their existence consists. But the difficulty inherent in the exact study of so restricted an existence is that which gives Astronomy its high logical value. To surmount the obstacles presented, the Positive method has to be developed and improved in several essential aspects which in abstract mathematics could only be handled in a very imperfect way.

Logical features of Astronomy. 1. Observation and induction.

In the first place Astronomy gives the first systematic training in the art of observing, and consequently in true induction. Neither the one nor the other can be called out sufficiently in Abstract Geometry, where the forms considered are so perfectly accessible to the senses of sight and of touch. Observation and induction are in this case so easy that geometers, with their quasi-metaphysical spirit, almost always overlook them, and exaggerate the province of deduction which is obviously of far greater importance. But in Astronomy the difficulty is much greater, and no such sophisms have been possible. Not merely is the necessity for bare observation undeniable, but it is impossible to pass by the intellectual process which always accompanies it, but which in no other case has the same prominence. Between Observation and Reasoning there is no absolute separation. No observation either can or should remain purely objective. This first of mental operations, like other facts of human nature, has always its subjective side, varying with the complexity of the case. Astronomical observation is a clear proof of this. All astronomical investigations, even when purely geometric, relate to phenomena insusceptible of direct exami-

nation. All that can be actually seen are certain simultaneous or successive directions; and from these the mind constructs the form or the motion which to the eye is imperceptible. In no other case can the necessity of constantly combining inspection with prevision be so obvious; the most elementary processes being here dependent upon it.

2. Art of Hypothesis.

Hence, too, the second logical characteristic of Astronomy: the light which it throws on the proper mode of constructing scientific hypotheses. Both the need and the nature of these powerful instruments can be appreciated in this science more readily than elsewhere; and thus their wise application in other fields is facilitated. The very starting point of astronomy, whether doctrinally or historically, the geometric study of the daily motion of the heavens, would be impossible without an abstract hypothesis which we compare with the concrete facts before us, and so connect the stellar positions together. Here the mind feels clearly, what in other cases remains long doubtful, that the field of Hypothesis is essentially coextensive with that of Observation, the necessary deficiencies in which it is intended to supply. There has never needed any philosophical discussion to prove that in astronomy legitimate hypotheses were as much restricted to facts and laws, as much excluded from causes, as the observations on which they were based. And throughout the whole course of astronomical study, whether in its geometrical or mechanical portions, the conviction of this important logical truth grows more and more strong. With all its value, however, it proves no philosophical superiority in astronomers: who were almost always under the influence of contemporary prejudices as to the necessity of looking for causes. It is entirely due to the special difficulties which concentrated their most important scientific efforts on the study of facts and laws, even while their minds were most strongly occupied with chimerical attempts.

3. Exercise on abstraction.

Lastly, Astronomy is a natural school in the art of scientific Abstraction. This feature, like the preceding, which indeed is connected with it, shows itself more and more clearly in each successive stage of the science, from its primitive starting-point down to its completest perfection.

Abstraction in Geometry is so easy that it takes place spontaneously without requiring any systematic effort calculated to explain the general conditions of the process. It rests here

on the two conceptions of universal space and of ideal types: conceptions formed instinctively by the simplest minds. In Mechanics, the difficulty materially increases; the conception of Inertia and of the laws of Motion which presuppose it, being far less obvious. The apprenticeship in this great logical process might be supposed then to begin here. But Astronomy applied it at a far earlier date, and will remain a better illustration of its true significance.

Abstraction in Astronomy consists in keeping out of sight for a time the minor irregularities which hinder us from grasping the fundamental law; the application of this law to the secondary phenomena of the subject being made subsequently. The necessity for this course was forced on the earliest astronomers when dealing with the subjective disturbances due to the fluid medium through which we observe, or to the unperceived motion and excentric position of our observatory. The ancients, with their rude instruments, were unable to take account of the errors thus caused, and thus they were led involuntarily and without effort to this first stage of the abstractive process. But in the systematic teaching of the science it will be necessary to explain the philosophic motives which render premature accuracy undesirable. Even the most rudimentary law, that of the diurnal movement, would be undiscoverable were the examination too strictly accurate; the modifications caused by refraction alone would be enough to obscure it. A similar necessity was felt by the moderns when founding Astronomical Mechanics. The fundamental law could never have been discovered unless Kepler and Newton had begun by ignoring the planetary perturbations; these being subsequently shown by their successors to depend on the secondary effects of Gravitation. In this case the abstractive process was introduced consciously, as a logical condition. It is therefore even a better exemplification of this important principle, ultimately to be applied more extensively, in the higher portions of Positive Philosophy.

Scientific value of Astronomy. Conception of invariable Order.

But whatever the logical value of Astronomy, its principal influence, mental as well as social, springs from the magnitude of its scientific results. From it will always date our systematic study of the natural Order which governs Humanity. This Order makes itself first felt in Mathematics, even in the simple arithmetical facts which connect themselves with every

element of our life. The laws of Geometry, and above all, those of Mechanics, reveal it to us still more clearly. But in Mathematics the proofs of its existence are too abstract and arrest attention too slightly to enforce acceptance of a dogma so alien to the first impulses of man's mind, whether individual or collective. Astronomy first gives full weight to the conviction. The imposing nature of its phenomena passing daily before us attracts universal attention from the manifest influence which they exercise on human life. The necessity of studying this inexorable Order is early felt; it regulates the whole conduct of life, even the times of our private or public festivals. Being so simple we are able to appreciate its regularity without difficulty, and thus to form exact previsions, which constitute the first distinct manifestation of the true scientific spirit.

Since it was only in these unmodifiable phenomena that the systematic conception of the natural Order could at first become definite, the mode of regarding them exercised a predominant influence on the early revolutions of thought. The most fundamental of these changes, that from Fetichism to Polytheism, was in every instance dependent on Astrolatry. The first imperfect reduction of Astronomy to Mathematics was the intellectual source of the concentration of Polytheism into Monotheism. Lastly, the discovery of the Earth's double movement, transforming Astronomy from the absolute to the relative state, has guided the modern mind to the entire elimination of all theology whatever.

Throughout this long period of intellectual probation, the gradual consciousness of Law in every department of Nature rested on the previous recognition of it in Astronomy; the laws of the more complicated phenomena being necessarily subordinate to those of the heavenly bodies. Indeed, until these other laws could be more distinctly known, the subordination was inevitably exaggerated, so much so as to appear unlimited. Such errors were excusable, and even for a long time useful, because they facilitated the introduction of the positive spirit into the higher studies.

Permanent importance of Astronomy as an instrument of discipline

In the normal and emancipated state of the human mind, Astronomy will occupy a somewhat less prominent position. Yet it will always retain a very high scientific value, as conveying the most general view of the environment in which the growth of the Great Being takes place. The unchangeableness

of the astronomical order is the first systematic basis of the final religion. It controls and harmonises not our opinions and actions only, but our affections. Its imperfections are real, and we need not ignore them; but it is here that we first begin to feel the need of an external Destiny, as the fundamental condition of all human discipline. Yet submission, as thus conceived, so long as the only phenomena considered are those which cannot be modified, would seem to involve the danger of resignation degenerating into fatalism. This tendency, however, which in earlier ages was a serious impediment to progress, is easily checked in a systematic course of education subordinating all preliminary studies to general expositions of their nature and purpose. The danger in question need not affect, even temporarily, the beneficial influence exercised on the mind and character by the consciousness of this immutable necessity, without which no bounds could be set to our ungovernable pride, nor any fixed direction given to our intellect.

It is well to remember sometimes, and to regret, the grave imperfections of an Order which we cannot modify. And yet no wise man would wish to be set free from it; and to see human life not merely loosened from all restraint, but devoid of any fixed object. The craving for this desultory independence is but one of the extravagances of metaphysical self-conceit. The defects which abound in every department of human life should result in prompting us to modify the External Order under its secondary aspects, although its fundamental laws are beyond the reach of our intervention. Even where our power is greatest, the initiative is not ours. Successful effort invariably depends on adaptation to this inflexible necessity, which we must begin by understanding and obeying. Had we the power to build up the whole Order of nature at our will and pleasure, all true discipline, individual or social, would be wholly impossible.

But this conclusion, though perfectly unquestionable, is too alien to man's native tendencies ever to have been reached, had all phenomena been susceptible of modification as well as subject to law. We may judge of this by the great difficulty experienced even now in recognising the existence of law in complicated cases where the margin of modification is wide; as in the case of social phenomena. The truth would never be

received but for the previous recognition of simpler and less modifiable laws in the more general phenomena. Proceeding backwards, step by step, we are thus justified in saying that the conviction of the External Order rests on the study of the facts which are inaccessible to human intervention. Astronomy therefore is to be regarded as the first objective basis for the systematic guidance of human life.

Relativity of knowledge.

It is moreover the starting-point in the training of our rational faculties. It illustrates better than any other science the true nature of all wise investigation. Its extreme simplicity enforces the conviction that Explanation of phenomena is nothing but the process of connecting them together by similitude or by succession, so that each phenomenon may be foreseen by means of its relation to others. But farther, Astronomy stood for a long time alone in forwarding that most fundamental of our revolutions, the conversion of Absolute into Relative conceptions; a change subsequently effected in every department of science.

This primary characteristic of the positive spirit was distinctly visible from the first moment when the facts of astronomy were first studied on mathematical principles. The correction of the commonly received notions as to days and hours, the seasons, the direction of weight, and so forth, was a forcible illustration of it. And when men's absolute ideas on these points had been converted by the Greek philosophers into relative ideas, it was felt at once that so far from being rendered arbitrary, they had for the first time been placed on a firm basis. Still clearer became the consciousness both of relativity and stability with the discovery of the Earth's motion; a discovery which substituted the relative notion of *World* for the absolute notion of *Universe*. Finally, the conception of Weight itself, which, as being inaccessible to any known power of modification, had hitherto seemed absolute, was rendered relative by the creation of Astronomical Mechanics.

Thus the whole tendency of Astronomy is to introduce the relative spirit into the field which, from its simplicity and independence, seemed at first sight most alien to it. In phenomena connected with man, it had always been impossible to ignore the existence of internal changes incompatible with the absolute spirit. But the case had seemed different with those phenomena of which we are only spectators. Yet it is

precisely from this field, which had seemed specially favourable to the absolute spirit, because inaccessible to human intervention, that Astronomy eliminates it. So decisive a triumph of Relativity in the first steps of the scientific scale, cannot fail to promote its rapid extension to more complicated phenomena, even before the direct study of these phenomena has established it.

Moral influence of this relativity.

And this tendency becomes even more distinct when regarded under the moral aspect. Rightly viewed, the study of the heavens extends the relative spirit from ideas to hopes, and thence to feelings. Scientific knowledge of planetary relations destroys the sense of absolute security from all possible risk of disturbance. Modern geometers have, it is true, proved the essential stability of the Earth's motion. But great as this discovery is, it only refers to the gradual changes due to secondary gravitations, which, as they truly state, result merely in oscillations of slight importance. But to say nothing of the resistance of the medium, an element always omitted from these calculations, we must take into account the possibility of sudden changes admitting of no real prevision, and against which no scientific discovery can ensure us. Collision with a comet, for instance, is a danger from which it can never be proved that we are really free. This final view of our true astronomical position adds energy and dignity to the human character, teaching us that it is from ourselves that we must draw our chief resources against the evils that surround us. It should not fill our minds with useless terror, but it should check the tendency to exaggerated forethought and to presumption which is inconsistent with the true happiness of Man or of Society. The generous sympathies on which above all our welfare depends, are called out thus more strongly than if we could place absolute confidence in any external guarantee. For supposing that we knew the Earth were destined to be shortly destroyed by collision with a star, yet none the less to Live for others, to subordinate personal to social feeling, would remain to the last the highest good and the highest duty. Those who can turn such thoughts to good account, from the deepest thinker to the most ordinary workman, will always regard them as tending not to decrease but to consolidate Man's true happiness.

Such then are the logical and scientific reasons compelling

us to regard Astronomy as an integral and permanent element in the system of Introductory Principles. It must of course remain subordinate to Mathematics, a science which covers a far larger field. But philosophically the principal characteristic of this first couple of inorganic sciences is due to Astronomy. We might indeed be almost tempted to regard Mathematics as a sort of Abstract Astronomy when we consider that its development has been so largely influenced by the study of celestial phenomena: the creation of Rational Mechanics in particular being entirely due to it. It would be a mistake, however, for the teacher to obliterate the distinction between these two sciences under an exaggerated sense of their historical relations. It is essential that the science of pure Mathematics should retain its place as the ultimate source from which every systematic conception of the Positive spirit must proceed. So too Astronomy, which after the mathematical preparation that has preceded, may be taught in twenty lectures of the second year's course, will retain its own special character without at all impairing that of the science which precedes it.

To complete this systematic though rapid view of astronomical science, we have now to consider the mode in which this science ought finally to be constituted.

Systematisation of the science.

The object of thus remodelling it is to render it more fully relative than it is at present. Great as its progress has been under many partial aspects, yet regarded as a whole it still retains an absolute character, inconsistent, as we may now see, with the principal truths revealed by it. The alteration required is no less than this; Astronomy has hitherto been purely Objective, it must now become Subjective. Abandoning the ill-defined aim of studying the Heavens, it must now propose to itself the study of the Earth; regarding the other heavenly bodies simply in their relation to the human planet. This course alone can give true unity, whether logical or scientific, to its speculations, and thus secure its proper philosophical and social influences.

Restriction to solar system.

Until the discovery of the Earth's double motion, Astronomy had this unity. Only it was based naturally upon absolute conceptions, which at that time were legitimate. All the stars were regarded as forming a single system, of which the Earth was the centre, having definite relations to all the other bodies. The only modification necessitated by the discovery of the

motion of our planet, was to regard what was formerly the objective centre as now the subjective. This would have sufficed for the purpose of converting the old absolute astronomy into a new relative astronomy, including those bodies only which bore some relation to Humanity, it having been first ascertained that the stars outside the solar system had no influence upon its internal phenomena.

But this vast discovery, the great line of demarcation between ancient and modern astronomy, took place in an age when owing to the utter disruption of the old scholastic system, discipline in scientific research had become already weakened. Points of detail being no longer subordinated to any general principles, the spirit of dispersive speciality became supreme; and astronomy, as the first step in the encyclopædic scale, was the first to break loose from control. Men continued to study all the heavenly bodies without distinction; although the new discovery had done away with the only link that connected them, and made it evident that the vast majority of them had no relation whatever to the only system intelligible to man and relating to his interests. And even though this system continued to be studied first, it was only on the ground that being more accessible to investigation, it furnished a basis for the study of the fixed stars. When this had been done, sidereal astronomy became the principal object, leading to a series of unconnected speculations as irrational as they were useless. These have now been continued for nearly a century, and, small as their result has evidently been, astronomers still persevere in the old and useless routine, although the public is now beginning to suspect its frivolity.

Futility of sidereal astronomy.

And thus, in default of all philosophical guidance, the discovery destined to recast astronomical science has introduced an element of anarchy which has for a long time been on the increase, and which would ultimately prove wholly destructive but for the new and final discipline which now awaits it. When all the heavenly bodies were supposed to be connected with the Earth, or rather subordinate to it, it was reasonable that none should be neglected. But now that the Earth's motion is known to us, it is not necessary to study the fixed stars, except so far as they are required for purposes of terrestrial observation; and astronomy properly so called may be reduced to the study of the solar system. Even supposing

it possible to extend our investigations to other systems, it would be undesirable to do so. We know now that such investigations can lead to no useful result: they cannot affect our views of terrestrial phenomena, which alone are worthy of human attention. We find this fundamental truth confirmed by every fact in astronomical geometry. It is possible to forecast our position in space on the hypothesis of our system being isolated; and the forecastings are found to agree perfectly with the results of minute and daily observation. This is explicable on mechanical principles by the general law that the motions of the parts of a system remain unaltered under any influence affecting the whole.

Even the solar system should be regarded from the terrestrial point of view.

To exhibit in a still stronger light the relative and subjective character of modern astronomy, the science should be concentrated not merely on the solar system, but on the particular planet inhabited by Man. The other bodies of the system are doubtless all more or less related to this subjective centre. But this is no reason for studying them specially, except so far as they have some scientific or logical bearing upon the one problem at issue. And thus we are brought back at last, on theoretical as well as on practical grounds, to the old view, adopted from the earliest rise of astronomy, of the preponderating importance of the Sun and the Moon; the central body round which we move, and that which in turn is dependent on us. The logical value for some time inherent in the study of the other planets exists no longer since the establishment of the theories relating to them. Scientifically there is still some importance in them, because these bodies exercise a certain influence on the Earth, and their secondary gravitations are to a certain extent interdependent. This is the only ground for encouraging the study of these accessory theories to an extent proportioned to their influence. Limiting ourselves to the degree of accuracy which is really necessary for practical purposes, we find that the majority of the bodies contained in our system are either too small or too distant to affect us, and that we may ultimately regard them with almost the same indifference as the fixed stars. When these are struck out, there will remain in the normal condition of astronomy, besides the three more essential bodies, only the five planets which have been always known, as being visible to the naked eye; a result due to their size or their proximity, on one or other of which

grounds they modify the position of the Earth. Unless this restriction be carefully maintained, we shall be as much encumbered with digressions on the planets as we have been with those on the fixed stars. Indeed, our busy collectors of unimportant, or even imaginary planets, show already too many evidences of this tendency. Everyone must remember the insane enthusiasm which a few years ago filled not the public only, but the whole body of European astronomers, at a so-called discovery, which, even supposing it genuine, could have no real interest except for the inhabitants of Uranus. So strong is the absolute spirit still, that universal attention has been given to the perturbations of an extremely distant planet, the influence of which on the earth is so inconsiderable that until the last century its existence was unsuspected, without the smallest inconvenience having resulted from our ignorance.

Constitution of the Science. Astronomy presupposes Geometry.

The order in which astronomical subjects, thus restricted, should be arranged, follows in accordance with historical filiation, from their subordination to the preceding science. We begin with the Geometrical problems, and from them pass to the Mechanical.

Prior to these two essential divisions of the subject, history indicates what may be called an Arithmetical Astronomy, dating from a time when geometry was unknown, and mathematics were limited to the mere study of number. As soon as a fixed system of numeration had been established, the first imperfect attempts were made to fix the length of the year and of other astronomical periods, these attempts being of course founded only on empirical observation. Historically this phase was of long duration. But in our systematic course of instruction it will be passed by; astronomy not being taught till after sufficient training in mathematics. Such questions in astronomy as require only the aid of arithmetic will be best taught in connection with the various theories of which they are the source or the application.

Real Astronomy presupposes Geometry. Previous to the two fundamental theories of Thales on triangles, no true science of the heavens was possible, notwithstanding all that has been said of the astronomical attainments of the old theocracies. Throughout its subsequent history Astronomy followed the progress of abstract Geometry, as it extended from rectilinear figures to circles, and thence to conic sections. The Geometry of the

heavens, as finally constituted by the three laws of Kepler, will always be regarded as the principal department of the Science.

Second in order to Astronomical Geometry come Astronomical Mechanics; impossible except on the basis of the former, yet exercising a most advantageous influence upon it, both logically and scientifically. The result no doubt has been to favour the irrational encroachments of algebraists; but these anarchical abuses must not make us blind to the immense advances, general even more than special, which followed from the theory of Gravitation. By it all our conceptions of celestial phenomena are grouped into a connected body of truth, to an extent unparalleled except in the higher and more synthetic problems of Sociology. It guides us to more distant and more exact previsions in every department of the science by systematising the study of Perturbations; although, notwithstanding the pretensions of the algebraists, it still remains necessary to study these from the geometrical point of view.

Influence of Mechanics on Astronomy; uniting it with other branches of Natural Philosophy.

But the great philosophical influence of this admirable discovery lay in showing the profound connection between Astronomy and the rest of Natural Philosophy. Of this Newton had a true sense, although his genius was special rather than general. His great step of identifying the Gravitation of the planets with the Weight of terrestrial objects showed clearly the subordination of the study of the Earth to astronomical knowledge, which latter again was advanced by the discovery. In his admirable theory of the Tides, the connection becomes strikingly evident. A purely terrestrial phenomenon is explained on considerations derived exclusively from Astronomy, of which science therefore this theory must be considered to form a part, although its final investigation is reserved for Physics. The philosophical influence of this relation will always retain in education the importance which it holds in history; helping us to work out the true hierarchy of the sciences with greater certainty.

Here then we complete our review of the first division of Cosmology, treating of inorganic existence in its simplest and most general form, first from the abstract, then from the concrete side. At present this is the only part of Natural Philosophy which can be regarded as in a satisfactory condition; its imperfections being merely due to the undisciplined spirit in which it is at present studied. As remodelled by Positivism,

Terrestrial Cosmology, pp. 416–454.

it enters at once upon its normal state, without the necessity of waiting for new discoveries, and indeed, with many useless or misguided investigations eliminated. With the other preliminary sciences the case is different. The province of Philosophy here is not merely to correct important errors, but to point out missing links which improved methods of study will supply. Both these necessities become very evident in the second half of Cosmology, the part which treats of the more minute and special relations of inorganic existence.

Interval between Astronomy and Biology formed first by Chemistry, then by Physics.

The two sciences here referred to form the kernel of Natural Philosophy, which indeed, but for this connecting link between Astronomy and Biology, could not have been regarded as a connected body of truth. The ancients had begun to study each of these two subjects separately, attracted by their practical importance. But there was no evident connection between them, although men were not without a dim sense of the subordination of the second to the first. In the Middle Ages this wide gap was partly filled by the appearance of Chemistry in the alchemistic phase. This intermediate link, being close enough to one end of the chain, although too distant from the other, admitted of an encyclopædic conception of science on which were founded systematic works of greater value than is now supposed. Such a conception of course could only be provisional, since in default of any direct relation between Astronomy and Chemistry, it was necessary to supply the interval by chimerical hypotheses based on astrology. Yet, full of errors as the scholastic conception was, it satisfied men's intellectual requirements for four or five centuries. The science of the heavens, which had been already based on Mathematics by the ancients, was brought, by the intermediate link of Chemistry, into close association with the science of living bodies. This imperfect attempt at an encyclopædic scale would certainly be very preferable, as a permanent state, to the scientific anarchy which prevails at present. But while rendering full justice to it, we cannot fail to see that another term in the series of our abstract conceptions of Natural Philosophy was necessary; that is to say, a department of science occupying the space between Astronomy and Chemistry, hitherto filled by chimerical substitutes. The necessity for this had been perceived already by Roger Bacon. But it was not till three centuries afterwards that Physics strictly so called became recognisable as a distinct

science under the stimulus given by Galileo. This science was sufficiently related to each of the two disconnected terms, so that the unity of scientific truth was now beginning to become appreciable. Nor would the true conception of the encyclopædic scale have been so long delayed but for the fact that the spirit of detail began precisely at this period to preponderate, and to disincline scientific men to any general views. Here then we have two striking confirmations in the history of the human mind of the great logical law that the intermediate truth is discovered subsequently to the two extremes for which it is destined to serve as the link.

PHYSICS, pp. 417–430.

PROPER POSITION OF PHYSICS IN THE SCALE OF SCIENCES.

Thus, although Physics was later than Chemistry in branching off from the common trunk of scientific research, yet the very motive for such separation leads us to place it before Chemistry in a systematic exposition of the natural sciences. This exposition, indeed, takes its character from this science more than from any other. From its first origin it suggested ideas of an encyclopædic nature even in minds more than usually absorbed by the specialising system. Strong traces of its influence on scientific language will always remain; the name which it bears being still often applied as a collective term to all the positive sciences.

The position thus occupied by Physics in the encyclopædic scale between Astronomy and Chemistry, in accordance with history and with the nature of the subject, represents very adequately the essential features of the science, logical as well as scientific. Of the five branches which it contains, the three first, the laws, that is to say, of Weight, Heat, and Light, connect it with the phenomena of the heavenly bodies. The final branch, Electricity, brings it into equally natural and close relation with Chemistry. It is the first part of the terrestrial division of Cosmology; and the phenomena with which it deals are modifiable, though to a far less degree than the facts of Chemistry. They leave the molecular constitution of bodies unchanged, and modify only the outward condition, or at farthest, the degree of cohesion. The universal Activity of Matter is not then here presented under the aspects most nearly resembling the spontaneity of life. But the mode of existence considered is of a kind far higher than the bare properties of extension and motion dealt with in celestial cosmology. We enter here upon the special study of man's terrestrial en-

vironment, beginning with those of its laws which have the greatest stability. The agents studied are seen afterwards to be the principal motors in chemical changes; but they are here considered by themselves, independently of their specific action upon separate molecules, and so far only as they affect the external constitution of matter. Physical actions, however, supply the first systematic basis of man's action on the material world. Between Physics and Biology there is evidently a direct relation independent of the intermediate link of Chemistry. We are dealing here with the primary external conditions of vital action, which is invariably subordinate to the physical action in all its principal aspects. Moreover, the science is indispensable as an introduction to the study of animal life, each of the senses being related to some special property of matter.

Thus, apart from its relations with the two adjacent sciences of which it is the connecting link, the science of Physics is of itself a primary constituent of natural philosophy. It contributes largely to our knowledge of the passive environment; it prepares the way for the study both of vegetable and of animal life; and thus it enables us to investigate the material aspects of Humanity.

Its influence on the inductive faculty.

Logically its influence is not less important. To it we owe that decisive impulse given to the inductive spirit which every subsequent step in positive philosophy has developed and strengthened. It is true that induction was called into play in Astronomy, and even in Mathematics; but these sciences are too simple to illustrate its character and its purpose with sufficient fulness. On the other hand, the subsequent sciences are too complicated to admit of a precise conception of it, supposing this not to have been already formed in Physics. But here we have the exact degree of difficulty required for the satisfactory presentation of Inductive Logic. Deduction has still an important part to play, but no longer a preponderating part, because the establishment of true principles is now becoming a matter of more difficulty than the development of proper consequences.

Induction more important than Deduction.

In estimating the part played by Physics in the elaboration of the Positive Method, we must bear in mind that the true philosophic spirit is distinguished far more by Induction than by Deduction. The latter, uniform as its procedure necessarily is, adapts itself to every phase of thought alike. It was abun-

dantly active when metaphysical modes of thought were in the ascendant. True, the science where it is most in the ascendant was the cradle of the positive spirit; but this is because the extreme simplicity of mathematical facts makes it so easy to establish the necessary axioms, the inductive process being performed very often unconsciously, and almost the only real difficulty lying in the successive connection of consequences. Deduction continues still to be of great importance in all the other sciences, but as the phenomena become more complicated the importance of induction increases. Here it is that we see what is the principal feature of the positive spirit, the subordination of the reasoning to the observing process. Indeed, it may be said that in proportion as our conceptions recede from the metaphysical stage, induction fills a larger place relatively to deduction, which at first had been supreme. The construction then of Inductive Logic, of which antiquity had scarcely any conception, is the principal feature of the modern mind. Being more objective in its nature, this method requires a long series of special investigations, so that each of the modes essential to it may come into view in the course of studying the corresponding phenomena. Of course the exaggerated preponderance of this method would soon lead to mischievous results by encouraging a purely empirical spirit. And this is the common tendency of inductive rules when regarded apart from their subject-matter. But the danger is removed by the Positivist plan of never separating Logic from Science. Studying each part of the inductive method in combination with the doctrines which have called it into existence, we feel at once the necessity of adjusting it with the limiting principles handed down from the preceding science. And in proportion as the phenomena become more complicated, will the logical weight of these preliminary principles become greater, because their truth will have been established in a greater number of cases. Incompetent as they will always be to furnish actual solutions, they will yet supply general indications, and thus mark out the direction which the special inductive process should follow. Thus it is that the encyclopædic character of Positive culture enables the student to steer between the two opposite dangers of Mysticism and Empiricism, to which all investigations are liable until the deductive and inductive processes have been properly adjusted.

The nature of Physics is such that amidst all the anarchy of scientific thought, these truths are forced on our notice; whereas in Astronomy, owing to the extreme simplicity of the phenomena, they frequently escape us. We see this exemplified in the writings of the abler physicists so early as the seventeenth century, especially in their investigations of Weight and of Sound, as yet unimpaired by the encroachments of algebra. Blind adherence to mathematical methods brought with it an exaggerated tendency to substitute deduction for induction; still the further progress of the science has constantly exhibited striking examples of true Inductive Logic. In fact all the really important steps in Physics were effected in this spirit, by men who were to a great extent free from the aberrations of their time. When the encyclopædic mode of study has become systematically established, this science will be more distinctly recognised as the first complete type of adjustment between Induction and Deduction, its own special characteristics being no longer obscured by those of the preceding sciences.

Development of experimental method.

And another more special tendency, directly connected with the foregoing, sets the contribution of Physics to Positive Logic in a still clearer light. That same moderate degree of complication which makes it the school of inductive reasoning, qualified it also for the introduction of the Experimental Method, which was the principal characteristic of Induction, until the philosophy of biological science had been formed. In the case of immodifiable phenomena this method is of course impossible, even if it were not superfluous owing to their extreme simplicity; the mental process which may be regarded as its equivalent is available for verification but not for discovery. On the other hand, in the case of phenomena of a higher degree of complication, the modifications, whether natural or artificial, are so diverse that experiment of a really crucial kind is rarely possible. Experiment involves the comparison of two cases identical in all respects except in the point examined. Now we can hardly ever obtain this identity except in the inorganic world; and even in Chemistry it is difficult to realise. Full scope for experimentation can therefore only be found in Physics; and here it is the principal instrument of discovery. No one should attempt to use it in other subjects till he has first become conversant with it in the original field. Thus independently of the stimulus given

to natural observation, the basis of all inductive reasoning, this science supplies a most valuable artifice, rendering the inductive process far more perfect.

Atomic theory viewed as a logical artifice.

It is to this science moreover that we owe the Corpuscular or Atomic theory; not less important, logically speaking, in Physics, than that of Inertia in Mechanics. The value of both is impaired by our tendency to endow all subjective creations with objective existence, as though they represented some external reality. But it is perfectly possible, while discarding these illusions, to utilise the great logical value of the conceptions themselves.

The ultimate structure of bodies must always transcend our knowledge. But while studying their properties, it is consistent with sound reasoning to make use of any hypotheses that will assist thought, provided always that they be not inconsistent with what we know of the phenomena. Now the Molecular hypothesis satisfies both these conditions in all inorganic researches, and especially in Physics, where it is favoured by the increased prominence of induction and experiment. While studying the general properties of matter, we find it useful to suppose them inherent in the smallest particles which the mind can conceive. Taking this as our starting-point, it becomes easier to realise the essential permanence of these various properties, the alterations in them being only those of degree. But while this relative mode of regarding the atomistic hypothesis is the philosophical justification for its employment, it is inconsistent with the belief in its absolute reality; and indeed it suggests limits to which it should be restricted. It is mere blind imitation to introduce it into Biology when the first principles of the Science are essentially synthetic, and therefore wholly alien to it. Even in Chemistry its strict application is limited; the properties there considered being too complicated and too variable to be attributed with any good result to unchangeable atoms. The corpuscular hypothesis, regarding it henceforth as a mere logical artifice, is, like the method of experiment, specially appropriate only to the first division of Inductive Cosmology. Here, however, its employment is absolutely necessary.

Metaphysical aberrations,

But apart from these primary conditions, the true logical character of this science requires special precautions against two prevalent sources of error; the aberrations of the metaphysi-

imaginary fluids, ethers, &c.

cians, and the encroachments of the algebraists. Both are attributable to the anarchy of scientific thought, which, involving a dispersive mode of study incompatible with comprehensiveness of view, prevents the science of Physics from assuming a sufficiently relative character. The same absolute spirit which is still so injurious to Mathematics, and even to Astronomy, does not fail to make itself felt in Physics, notwithstanding the more favourable auspices, now too little heeded, under which the science arose. It is indeed common to protest, in language incorrectly borrowed from Bacon, that the study of causes is henceforth to be abandoned, and that science is to be devoted entirely to the study of laws. But even when these protests are sincere, they are but too often a mere veil for irrational leanings towards absolute notions. Anarchy, whether in science or elsewhere, can never satisfy, and can never last. Eager though the modern mind may be for complete emancipation, it will revert under one form or other to the metaphysical phase, until it has accepted the new philosophic discipline towards which the growth of Positive thought is now guiding it.

The most striking examples of this retrograde tendency are the anti-scientific hypotheses now maintained in various branches of Physics with regard to imaginary fluids or ethers. As far back as 1835 I had conclusively shown in the second volume of my Philosophical Treatise the absurdity and the danger of these semi-metaphysical conceptions. But though no serious objection has ever been raised against my criticism, it has failed as yet to effect a sufficient change in the prejudiced routine of scientific enquirers. It is true that more stress is now laid than formerly on the preliminary announcement that these unproved hypotheses are introduced merely as logical artifices to facilitate the discovery of laws, without attempting to decide as to causes. Yet notwithstanding this cautious language, the limits thus assigned are overstepped, and a great part of each branch of Physics is occupied with demonstrations of the reality of the particular fluid employed. Thus the investigation is still in reality one of Causes; the Law is only regarded as an accessory, or as a condition through which the Cause is to be reached. By this deplorable procedure, while the solution of the chimerical problem is as far off as ever, the prosecution of the only real question is seriously

hampered. In the first place it encourages empiricism under the specious disguise of superior rationality. Secondly, it authorises and multiplies useless enquiries, by giving rise to endless discussions of questions to which no answer is possible. In this way the special study of this preliminary science is protracted indefinitely, the true character and purpose of it being alike forgotten. Though credited with being peculiarly hostile to theology it is in its present form still less favourable to the true Positive spirit, especially to the recognition of subordination to social science. All the various retrograde tendencies are now, consciously or unconsciously, united by latent affinities. The savants who adopt these metaphysical delusions, no matter to what political party they may profess to belong, will always be opposed to the recognition of the higher branches of study, for fear that their scholastic disputes will fall into discredit.

Encroachments of Algebra.

But a further illustration of the absolute tendency now prevalent in Physics, is the encouragement given to the encroachments of Algebra. It is on these fantastic hypotheses that our geometers rely when they endeavour to make this science a sort of general corollary of mathematical theories; a result which would limit its direct study to the very humble function of determining certain numbers. Thus the system, favourable as it is to empiricism, gives rise at the same time to a mysticism as unreal as that of the purest metaphysician.

The extreme limit of strict mathematical reasoning is Abstract Mechanics. And even here we can only arrive at general laws; we are rarely able to solve special problems, except in the case of the heavenly bodies. Elsewhere, and even in the case of Physics, all that mathematics can do is to give general indications guiding or testing the direct inductions, which must always be the principal source of scientific progress. They serve occasionally the accessory purpose of developing in a more complete form those physical theories of which the precise laws are known, and which therefore become simple exercises of geometry; as, for instance, in that part of Optics which deals with the secondary effects of refraction. But problems involving mechanical as well as geometrical theories present in almost every instance, except in the simplest parts of Barology and Electrology, insurmountable difficulties; and the solution, when obtained, is very often imaginary. Even in Acoustics,

where the mathematical treatment seems so satisfactory from the entire absence of any metaphysical fluid, the most important special results are not really due to mathematics. The celebrated theory of Vibrating Cords when looked at impartially is seen at once to be utterly defective, owing to the necessity of simplifying the algebraic process at all costs, and on arbitrary and unintelligible principles. Had not the well-known laws for the measure of tones been already obtained by a successful series of experiments, this ambitious course of reasoning would have been but a poor guarantee for their reality. Yet this instance is still cited as a triumphant proof of the power of mathematical reasoning to make physical discoveries. It is true that in addition to the questions which can be transformed into mere geometrical or mechanical exercises, the calculus has in certain cases a more immediate function, where the phenomena are sufficiently simple to admit of direct reduction to equations. The only important instance of this kind is the question of equilibrium and change of temperatures, which the great geometer Fourier proved, by a series of profoundly philosophic investigations, to be susceptible of algebraic investigation. But these questions form but a secondary portion of the science of Thermology, and they are not capable of much useful development. In the hands of Fourier's successors they have done little but increase the number of useless algebraic exercises. We miss in them altogether that thorough understanding of the true subordination of the abstract to the concrete which was so strongly marked in the immortal founder of Mathematical Thermology.

It is a confused sense of the limits within which the mathematical spirit is confined when dealing with the simplest terrestrial phenomena which accounts for the obstinate leaning shown by modern algebraists for these metaphysical fluids. They seem to give some colour to their attempts to overstep these natural barriers. But the ordinary result of these pretentious calculations is only that the absence of all really scientific views is concealed under a specious verbiage which has now become the principal resource of ambitious mediocrity. This purposeless invasion of algebra, hurtful as it is to the real progress of Physics, can only be arrested by energetic enforcement of the obvious principle that each science in turn should direct the application of the preceding science. But this logi-

cal rule, which I have long and unsuccessfully urged upon all conscientious physicists, will never be adopted till the entire abolition of the academic system gives free play to encyclopædic culture. As long as the present anarchy lasts, each science will continue to encroach upon the one which follows it, and will therefore have no ground for complaining of those inflicted on it by its predecessor.

Reorganisation of Physics depends on the general reorganising movement.

Thus it is that the question of reorganising the principles of physical science depends ultimately upon entire renovation of thought, and is therefore intimately connected with the great problem of social regeneration. In every department of human affairs we find the provisional system of thought effete. We have got from it every progressive element of which it was capable; and now it is becoming every day more retrograde, even in science, as is exemplified in Physics by the unfortunate disposition to abandon previous discoveries in the vain attempt to arrive at absolute precision. Partial reconstruction of this system is impossible, because its separate branches issue from a common stock. Consequently, Sociological religion, though apparently concerned exclusively in the moral and political problems, is also the sole agency for controlling the disorder of scientific thought.

Constitution of the Science.

Such then are the primary logical principles on which this science should rest. I come now to the arrangement of its subject-matter, dealing briefly first with its principal divisions, then with the order of their succession, and lastly, with the extent of the field which they should occupy.

Attempt to reduce its various branches to one chimerical because they depend on multiplicity of senses.

It is commonly supposed that the multiplicity, characteristic of this science ever since it entered the Positive stage, will be reduced to unity by some better adjustment of the various hypothetical fluids. But the only basis for this utopia is the mistaken preference of Physicists for the objective point of view, springing from the conscious retention of absolute tendencies. Physics, like all other sciences, can only become in the true sense Positive by becoming relative to the fullest extent. And in Physics even more than in other sciences, this is impossible until the objective point of view be superseded by the subjective. What we are here investigating are the various modes in which our terrestrial environment becomes known to us. The divisions of the science are determined more by the multiplicity of our own senses than by the corresponding dis-

tinctions in the properties of matter. They result from the constitution of Man, not from any objective source.

Two of these divisions are connected respectively with the senses of Sight and of Hearing; these obviously must always remain distinct. In the other three branches of Physics these two senses render more or less assistance to the sense of Touch. But the uniform preponderance in them of the latter sense is but a very slender ground for hoping that Electrology will ever be connected with Thermology, and still less with Barology.

And, indeed, in these three branches philosophical examination will show an exact correspondence between the diversity of sensation and the objective distinction. Notwithstanding the received notions of biologists on the subject, there is much ground for thinking that under the name of Touch we confound three senses which are quite distinct, even though the anatomist may not be able to separate the nerves belonging to each. Ever since the first special discovery of nervous functions, that of the distinction of sensitive and motor nerves, there has been a belief that a single system of nerves cannot suffice for the perception of Weight, Heat, and Electricity. The physiologist frequently finds an absence of correspondence between these three sorts of sensation, and this whether he compares different organisms, or the same organism at different times. Statical enquiry will doubtless test the truth of these dynamical indications, as it has done in our own time for the analogous supposition of the distinction between sensory and motor nerves.

Deficiency of sciences corresponding to senses of taste and smell.

From this general view of the matter then we might expect to find that Physics had already reached that harmonious adjustment of the two modes, the subjective and the objective, which regulate the constitution of the science. On further inspection, however, we find two senses, Taste and Smell, to which the principle fails to apply, there being no department of Physics which corresponds to them. With regard to Taste, the failure is of small consequence, as this sense is rather chemical than physical. Connected as it is with the life of nutrition, it seems hardly to admit of being studied as a purely physical process, and apart from the action of nutritive substances on the digestive apparatus. With the sense of Smell the case is different. It is connected throughout the animal series with the life of relation, and especially with the

intercourse of the sexes. The emission of odoriferous particles, their direct transit, their reflexion, refraction, and so forth, follow no doubt general laws as definite, if we knew them, as those which regulate sonorous or visual actions. Our present ignorance with regard to them is due chiefly to the imperfect development of this sense in Man. We should be equally ignorant of Optics and Acoustics if our auditory and visual senses were as imperfect as the olfactory. Still, since this sense is not entirely absent, as it is in many of the lowest animals, this difficulty cannot be wholly insurmountable. Rudimentary as the sense is in man, it may be artificially developed so far as to enable us to study the physical agencies concerned in it. In addition to such inorganic agents as we employ in the case of light and sound, it would not be impossible to derive valuable assistance in the investigation from animals better organised than ourselves in this respect. And their association with us would in turn throw much light on their natural history. At present their intellectual and moral life offers many points that are wholly unintelligible, owing to the absence of this branch of Physics, which is often quite as necessary as the sciences of Optics and Acoustics are in other cases.

Rejecting then the visionary notions of modern physicists as to the ultimate unity of their science, a sounder philosophy indicates six, and perhaps seven, irreducible branches in place of the five recognised at present. This science, therefore, as at present constituted, is imperfect; still its true character and position in the encyclopædic scale is clearly indicated, and may soon be realised. The aim in view is, as we have seen, to adjust the objective with the subjective aspect, both equally in accordance with the relative character of the science. With the addition of the new branch above indicated, nothing more will be needed but the correction of certain errors, and the elimination of superfluous matter.

We see in Physics, more clearly than elsewhere, the peculiarly analytical character of Cosmological science. The only Unity possible is that of a subjective kind. Its five branches have arisen and have developed themselves almost simultaneously; and they are to a large extent independent of each other, as are the senses to which they correspond. The separation between them is far deeper than that of the three divisions of mathe-

matical science. Mathematics, but for our scientific anarchy, would never be spoken of in the plural; but Physics will always bear out the suggestion of multiplicity conveyed in the name.[1] Still, the unity which the name (in some languages) bears indicates a real affinity between these branches, which, viewed subjectively, constitute in the true sense a whole. They embrace all the external properties which make up Man's conception of inorganic existence.

Classification of the Physical Sciences.

Being thus independent, objectively speaking, of each other, the co-ordination of the various portions of this science has far less importance, especially for didactic purposes, than is the case elsewhere. Still, from the subjective point of view our choice will not be arbitrary. We have two obvious conditions to guide us. In the first place, we should so form the series as to render it consistent with the position of the science in the encyclopædic scale as the intermediate link between Astronomy and Chemistry. Secondly, the arrangement should agree with that which Biology would indicate for the corresponding senses. Now as the principle of this latter arrangement is that of increasing speciality, it will naturally coincide with the continuous diminution of generality involved in the passage from astronomical to chemical studies.

Barology, Thermology, Optics, Acoustics, Electrology.

Allowing equal weight to either motive, they decide for us at once the first and the last terms of the series. The connection with Astronomy and with Chemistry points to Barology as the first term and to Electrology as the last. Moreover, the former of these relates to the most general, the latter to the most special, of the seven senses which Biology seems, on the best hypothesis, to indicate. So much being established, the intercalation of the remaining terms is a matter of less consequence, and indeed it seems to follow of itself without leaving much matter for doubt. Evidently on both the grounds that we have adopted Thermology will come before Optics. We have only now to fix the position of Acoustics. This in fact is the only case in which our principle of classification fails to apply; the two motives for preference not coinciding here so evidently as in the other cases. In any Positive Philosophy I placed Acoustics next to Thermology,

[1] The French equivalent for 'Physics' being singular, the translation is here slightly modified.

remarking at the same time that very good grounds might be alleged for reversing this order, as in fact had been previously done by writers of eminence. At present I incline to reject either view, and to class Acoustics between Optics and Electrology. It is principally upon biological grounds that I would do this. Hearing should be placed after Sight, as being more special and more elevated, in a word, more social. Besides this, the phenomena of sound are more closely related than those of Light to the phenomena of Electricity. They are more special, and also they have more analogy to the effects of chemical action. The internal agitation which is their characteristic has a closer resemblance to electrical impulses than would appear from the irrational use of the metaphysical fluids now in vogue; materialised entities by which the real activities of the bodies themselves are concealed. In the arrangement previously advocated I was thinking too exclusively of the extent to which optical science had been injured by these vicious hypotheses, from which Acoustics had been happily preserved. But in considering the normal state of Physics we need not take account of these aberrations, which in the next generation will possibly have become historical. The order then in which I would finally place the five departments of Physics would be as follows: Barology, Thermology, Optics, Acoustics, Electrology. When the sixth branch of which we have spoken has been constituted, it will take its place naturally between Thermology and Optics, both our motives for choice in this case coinciding.

Proper limitations of the Science.

The extent to which each of these studies should proceed is determined by the twofold purpose of the science; that of rendering us cognisant of our terrestrial environment, including its gaseous and liquid envelopes, and that of preparing the way for Chemistry and Biology. In no case are the grounds more cogent for the religious precept bidding us, in the name of good sense and of morality, limit the study of the lower sciences to what is required for the prosecution of the higher. This rule is sufficient to authorise and to incorporate every theory in Physics which really merits preservation. It eliminates only the useless enquiries which are now encumbering this admirable science, although to a less extent than in Mathematics or even in Astronomy. By regarding for instance Optics or Acoustics as a preparation for the biological study of Vision

or of Audition, we sanction every speculation of real interest, and on several points we stimulate new and important enquiries. Besides, it is only by proceeding in this encyclopædic spirit that we can escape the illusions under which we are now labouring as to the objective reality attributed by physicists to purely subjective phenomena. Under this head possibly are to be classed many of those known as interferences in Optics, or as 'nodes' in Acoustics. The more thoroughly we test this controlling principle, the more favourable will it be found to the true progress of Physics. It eliminates only those academical puerilities which are as useless now for logical as for scientific purposes. An adequate exposition of this great science will thus become possible in the forty lectures devoted to it in the third year of Positivist Education.

Its importance however in education can never be quite as great as its influence in history. It has promoted the progress of the modern mind to an extent greater than its position in the encyclopædic scale would have led us to expect. I have already explained why it was developed at a later date than the other preliminary sciences. It was thus contemporaneous with the first dawn of true encyclopædic views, which, impossible previously owing to the absence of any sufficient basis for them, began now to appear in spite of the dispersiveness of scientific culture. The real reasons of this coincidence not being understood, the science of Physics was credited with greater philosophical influence than it really possesses. In the normal state of philosophical teaching there will of course be nothing corresponding to this. It is merely an historical incident of great importance, due simply to the exceptional nature of the situation.

CHEMISTRY, pp. 430–454.

The remaining science in this systematic review of Cosmology is that relating to the phenomena of composition and decomposition, the most special and the most complicated phase of inorganic existence.

Its logical aspects. More removed than Physics from the danger of overstrained deduction.

The importance of this science, unlike that of which we have just spoken, is less scientific rather than logical. No great advance is made in Positive Method; we develop merely with greater fulness the various inductive processes discovered in Physics. Still the higher complication of chemical studies renders the inductive process more prominent, and restricts still further the sphere of Deduction, which now abandons once for

all its mathematical forms. In passing from Physics to Chemistry we feel more clearly than ever that the true character of Positive Logic is far more inductive than deductive. Induction is always employed with the view of ultimately deducing, but Deduction when carried to any length is apt to lose sight of its inductive source. And the contrast perceptible between geometers and chemists of the present day shows that the intellectual difference leaves its trace upon the character.

In addition to the hardening effect of all work in which the sympathies are not called into exercise, scientific study has a special tendency to stimulate pride by leading to an exaggerated estimate of the value of individual exertion. And nothing can avert either of these dangers but true religious discipline of a kind which shall encourage largeness of view and penetrate the student with a social spirit. Amidst the anarchy of our time the danger is becoming daily wider and deeper. But the academic system, which gives free scope to these injurious influences illustrates at the same time the unequal extent to which different classes of savants are affected by them. They suffer less severely in proportion as their field of study is more closely related to the ultimate object of all positive speculation. This difference, very perceptible even in the various departments of Cosmology, is due both to the methods and to the subject-matter of the sciences in question. In the first place, the higher studies illustrate more clearly than the lower the social purpose subserved by all rational investigation, and show too that the human point of view is the only aspect from which positive conceptions can be regarded as a whole. And this difference in logical character affects the result, though less obviously. The gradual preponderance of induction over deduction tends to diminish the moral danger of scientific study. The latter is the stronger stimulus to self-conceit; the mind imagining its conceptions drawn from itself, without the necessity of external aid. Induction, on the contrary, always implies an objective source, and also more or less cooperation of other observers. It is principally in deductive studies that we find the absurd and objectionable custom of teaching a science without the slightest indication of its history, just as if the expounder of it had created it entirely himself. All these faults of the academic system will disappear in the encyclopædic mode of study. Still, even in the normal state it will

always be felt that deduction rather than induction is the chief source of the dangers inherent in scientific culture. We become conscious of the difference as soon as we approach the field of terrestrial Cosmology. In Physics, however, the encroachments of algebra have hitherto disguised it; I therefore deferred the general explanation of it until I came to treat of Chemistry. The one-sided character of modern scientific culture makes the distinction abundantly evident.

It affords glimpses of the comparative methods.

As finally organised, the logical value of this science will not be limited to a mere extension of the inductive processes developed in Physics. Holding an intermediate position between the study of the World and the study of Life, it will prepare the way for the methods peculiar to Biology. In the third volume of my Positive Philosophy I long ago pointed out the radical improvement which might be effected in Chemical reasoning, by a proper application of the comparative method and of the theory of classification. Both these steps, of such essential importance in the evolution of Positive Logic, though due primarily to Biology, are in a minor degree applicable to Chemistry, as will be more distinctly seen when this science is cultivated in the encyclopædic spirit. Ever since Chemistry has become a distinct science, the materials for this higher induction have been ready at hand. We have many instances, especially in the case of salts, of natural groups in the true sense of the word. And the comparative method would be now employed in Chemistry, in accordance with my suggestion, but for the inadequate training of modern chemists, who are as ignorant of the sciences higher in the scale as they are of those that are lower. As taught on the encyclopædic plan Chemistry will be the first training in this third mode of induction; the facts of the science being sufficiently complicated to render its employment necessary, and yet simple enough not to render it difficult. As, however, the method did not emanate historically from Chemistry, so neither can it be fully illustrated in this science. It is not till we come to Biology that we can fully appreciate its fundamental conditions. Chemistry offers merely the first intimation of it, in the same way that Astronomy indicates other modes of induction which it is left for Physics to develop afterwards more fully.

It has developed the art

Thus the best logical features of Chemistry are borrowed from the two adjacent sciences. Its own special contribution

to the elaboration of Positive Method consists in the art of systematic nomenclature. Phenomena of a more general order are too uniform to admit of this artifice and too simple to require it. Astronomical nomenclature, for instance, is strange enough owing to polytheistic and even fetichistic traces; still the complete remodelling of it is neither urgent nor difficult. But in the comparison of chemical facts there is such variety and complication that this resource becomes highly desirable. And in fact it has always been found practically serviceable. The systematic scheme of Guyton-Morveau and others was but a correction and development of previous efforts based upon completer knowledge. This instrument of thought, like every other logical process, must be studied in its actual source in order to be adequately appreciated. Yet undoubtedly useful as it has been in Chemistry, its influence on Positive Method generally has been but small. General as the process is in its principle, it admits of no important application to other branches of study. As the previous sciences are too simple to need it, so those which follow are too complicated for its adequate application. All that it does is to exhibit the mode in which substances are compounded, and as this is the one great object of chemical study, the procedure is peculiarly appropriate to this science; and is at present almost the only means of preserving it from pure empiricism. But in more elevated subjects the points of view are too varied for any important results to be attained by it. The best attempts that have been made to imitate chemical nomenclature in Biology have done little but give factitious importance to somewhat insignificant improvements. Of this at all events we may be sure, that the service rendered in this way by Chemistry to Biology will not be equivalent to that derived from the latter by a wise adoption of the comparative method. The very grounds which give importance to systematic nomenclature in Chemistry limit the value of it in other departments. It belongs even more exclusively to the science in which it originated than the experimental method belongs to Physics.

of scientific nomenclature.

To inductive logic then Chemistry has made no contribution of primary importance. And as to deductive logic, all its principal processes originated, and have been fully matured, in Mathematics. So uniform is its procedure that all that is left in this respect for the higher sciences is to afford illustrations

of the growing difficulties attendant on deduction as the phenomena increase in complexity.. The processes meanwhile are throughout intrinsically the same, resulting as they do solely from the structure of the human mind, and not from the objects on which the mind is meditating. This inevitable increase in logical difficulty becomes extremely perceptible in chemical researches. It gives real merit to operations of which the logical value in a simpler sphere of thought would have been very slight. For example, Ritter is justly remembered for having deduced from the fact, already discovered, of the permanence of neutrality in the double decomposition of salts, a hitherto unknown consequence, on which the whole scheme of numerical chemistry is founded. Apart from the scientific importance of the discovery, the logical value of it lies in the difficulty of carrying out in so complicated a field a deductive process which in Mathematics would have passed almost unnoticed.

Its scientific aspects.

It is clear, therefore, that the speculative value of Chemistry consists, not in the elaboration of any new method, but in the scientific results obtained. In this respect it is unquestionably the most characteristic, and indeed the most important section of Terrestrial Cosmology.

It deals with the most complex mode of inorganic existence.

And first, Chemistry completes our knowledge of inorganic existence by presenting its most intimate and varied mode. In Mathematics and Astronomy we have seen the activity of matter only in its simplest and most universal manifestations. In Physics we find these changes of form and position connected with alterations of a deeper and more special kind in the constitution of bodies, especially affecting their outer surface. But these changes relate to the state in which the body exists; the substance remains unaltered. Chemistry, on the other hand, relates exclusively to changes in the substance; and it reveals a mode of energy differing in kind as well as in degree from anything previously observed. We find here inorganic activity in a state so nearly resembling the spontaneity of life, that great difficulty was found in laying down a clear distinction between them. And not merely is this activity more penetrating than the kinds previously considered, but it is also more special. Whereas physical properties present mere differences of degree, chemical action always issues in the formation of new substances, a result which metaphysical modes of thought have not been able to disguise. It exhibits nevertheless that character of

universality which forms so deep a distinction between Cosmology and Biology; all bodies in one way or other taking part in it. But not only is the mode of action always special in each case, but it requires also a combination of external conditions which very often could not exist but for man's intervention. And thus chemical activity, though in the strictest sense general, can never be permanent. Its operation is strongly stimulated by physical agencies, when their intensity exceeds the limits ordinarily found in nature. Not however that chemical action is produced by these agencies. The influence of Heat, and still more that of Electricity, in this respect has been much exaggerated. Two gases, for instance, may seem to be combined with great force by a mere spark; but the action here is really due to the substances themselves, and though facilitated and hastened by this accessory stimulus, would have taken place without it, though less rapidly. The intrinsic activity of matter is still much disguised by metaphysical fluids, but the evidence of it in Chemistry cannot fail to convince all who have escaped from the trammels of mere entities.

It was therefore an advance of very great importance, when the conception of natural laws, once limited to the sphere of Mathematics, was extended to this region. What principally led to it was the modifiable nature of chemical phenomena. They are more accessible to human intervention than any other mode of inorganic action. But for this fact, their greater complication would have allowed them to remain far longer under the influence of supernatural wills. We begin now to feel that in our passage from lower to higher phenomena, the difficulty of prevision will be compensated by the facility of modification; a property almost equally efficacious in loosening the yoke of theological and metaphysical doctrine, and in preparing the way for the establishment of the Positive Method. And in chemical studies this power of modification is peculiarly prominent, because most of the phenomena are artificial, leading indeed often to exaggerated impressions as to the part played by the experimental method.

Its influence on industrial progress.

The practical importance however of this power is very far greater than its theoretical utility. Chemistry will always, and to an increasing extent, constitute the principal mathematical basis of man's material action. Of the beneficial influence

thus exercised upon education I have already spoken. Our previous studies of natural philosophy have evoked the feeling of Order. Chemistry combines with it the notion of Progress. Too exclusively studied, its tendency would be prejudicial, as giving too great prominence to our lower instincts. But this disadvantage, the result of academic teaching, disappears at once when Chemistry is cultivated in the encyclopædic spirit. We shall be taught to regard this material progress simply as a first and necessary step in the course of human advancement, of which moral progress forms the principal field.

The obvious relation of Chemistry with every branch of human industry has always connected its history with the general growth of society. Under the old theocracies, where the technical arts were always cultivated empirically, certain attempts at hermetical philosophy were made by the priesthood. But these primitive germs of chemistry were rendered for a long time abortive by the necessary preponderance of military activity, which, while it stimulated mechanical inventions, abandoned all manufacturing processes to slaves. Consequently chemical studies were not seriously resumed until the Middle Ages, when the serfs were emancipated and began to betake themselves to industrial pursuits. They then completely revived, and their progress ever since has followed and assisted that of the principal departments of industry, the special processes of which they will never cease to direct.

It prepares the way for Biology.

But Chemistry has another purpose besides that of completing Cosmology by investigating the most special form of inorganic activity. Its importance is equally great as a preparation for Biology, the most fundamental notions of which would be unintelligible without the preparatory knowledge which it conveys.

I have already alluded to this when speaking of the influence of Chemistry on the encyclopædic conception of science introduced towards the close of the Middle Ages. It was on Chemistry that it principally hinged, because by its means a systematic transition was established between Astronomy and Biology. And its utility will not be less in individual teaching. Its phenomena will always present themselves as an intermediate term between the activity of the heavenly bodies, and the activity of living organisms. Without Chemistry we could not enter upon the rational study of vegetal life, which is the basis of animality,

and even of humanity. Its results are of fundamental importance in two ways; they explain the properties of organic environments, and they supply the general laws of organic compounds. Besides this, the position occupied by Chemistry in the encyclopædic scale is of itself a training in biological method, by implanting our first systematic notion of classification in the various modes of existence. Taking the three sciences, Astronomy, Physics, and Chemistry, in their order, we see in the inorganic world a succession analogous to that found afterwards in vital processes, beginning with the nutritive or vegetal life, passing thence to the animal life or life of relation, and ending with human or social life. True, the Cosmological series does not admit of all the intermediate terms which exist in each of the three branches of the higher series. Still, when we confine our glance to the three essential stages of inorganic existence, the mathematical, the physical, and the chemical, we cannot fail to notice a hierarchical succession analogous to that of the vital order. As with the organic states, so here each modifies the preceding phase, being at the same time governed by it.

On all these grounds Chemistry takes rank above Physics; the principal value of the latter science being to serve as an introduction to the former. But the fact that such an introduction is needed is a sufficient proof of the dependence of chemical upon physical method. It is well to remember how difficult it was in former times to make a definite distinction between these two conterminous studies. To this is due the long delay in the full maturity of chemical theories subsequent to their first study by the scholastic philosophers. Their full development was impossible, even under metaphysical forms, until the principal laws of Physics had been clearly grasped; and this was not the case until the last century.

Though Chemistry, like the other Cosmological sciences, is but an introduction to the one final science, yet it brings us sensibly nearer to this ultimate goal of all positive speculation. The advance in this respect is inherent in the nature of chemical research; but it is visible also in the logical processes employed. In spite of academical routine, the part played by the Calculus, which in Physics had been too prominent, is in Chemistry very subordinate. Analysis, previously preponderant, is here combined with Synthesis, to which it is ultimately to

Chemistry more amenable to social discipline than previous sciences

yield precedence. The consciousness of a practical purpose to be subserved by all healthy speculation is more constantly kept in view, and the conceit of science is more easily held in check. There are stronger grounds, then, than any that were recognised by primitive religion, for investing this science with a sacred character, due to its close relation with the material existence and activity of the Great Being. It is indeed readily amenable to that principle of Love by which all human exertions should be animated. All that is wanting is to turn the material power with which it endows us into a social channel, diverting it from the personal motives which it has too exclusively subserved.

Isolated culture of each science in inverse proportion to its rank in the scale.

Before proceeding to the direct consideration of the science, it is necessary to apply an important principle, already spoken of in the Mathematical section of Cosmology.

When defining the proper limits of Mathematics, I laid it down as an encyclopædic rule that the study of each science should ultimately be restricted to what is necessary for the succeeding science. The reader will have seen that the field thus opened is wide enough to include all the great principles special to each science, whether logical or scientific. It will have been seen also that this religious discipline has another object besides that of hastening through the preliminary stages of teaching and subordinating them to the one science which is in the true sense final. The substitution of encyclopædic culture for dispersive routine will have also the effect of ennobling these partial studies, and of promoting their progress in every important direction.

Let scientific teaching become as rational as it may, it must inevitably pass in the first instance, as was the case historically, through a stage of speciality, because the conceptions which regulate the whole are the last to be reached. But for the individual student this state of things will be even more transient than it was for the race. To prolong it farther than is necessary would be not merely immoral, but irrational. For it is only from the encyclopædic point of view that the great truths of each special science can be fully comprehended. This holds good even of Mathematical science. Studied separately it tells us nothing, for instance, of the higher properties of numbers. Their intellectual and moral attributes, so important, though now almost forgotten, are reserved for Sociology,

which in this respect rectifies and completes the anticipations of ancient philosophers. And speaking generally, the thorough comprehension of any science is impossible until we study its true relations, statical or dynamical, with the Great Being from which it is derived. This then is the ultimate position in which true thinkers should establish themselves as soon as possible; recognising at the same time the necessity, both on logical and scientific grounds, of the long and laborious path by which alone it can be reached. Reserving for this definitive point of view all cosmological and biological studies which admit of adjournment, we shall thus be able to concentrate on every great problem the total sum of our speculative resources. And above all, a large and constant use will be made of the historical method, which, destined ultimately to control all the others, has hitherto exercised only a subsidiary influence. The point at which this transcendental logic becomes available marks the philosophical limit of the preliminary stage of investigation. For the encyclopædic rule which I have proposed is equivalent to saying that the isolated study of each science should be carried only so far as is necessary to understand its history. This final mode of regarding the subject will preserve our speculation not merely from idle digressions, but from the ill-conceived and premature attempts which hitherto have absorbed so large a share of our intellectual energies. For the principal cause of these failures has been that the instinctive choice of these problems was unguided by any systematic principle, owing to ignorance of the sociological laws to which the course of discovery in every department is subject. As soon as theoretic culture is placed under the superintendence of the priesthood of Humanity, any special developments, even in Sociology, will be limited to what is necessary for practical purposes. The unwise and rash precipitation which has brought such confusion into modern science, springs from the blind and one-sided zeal of minds imperfectly trained, and therefore not prepared to vary the direction of their efforts sufficiently.

The foregoing rule as applied to the three first branches of Cosmology, indicates a law of succession easy to account for, and bearing on the present science, as well as on Biology. The relative extent to which the preparatory study of each science is to be carried diminishes as we mount the encyclopædic scale, and pass from the more general to the more compli-

cated phenomena. There are two reasons for this result: the one scientific, the other logical. The doctrines become more closely related to those which we regard as the limit of the speculative series; and meantime the methods have been more fully elaborated by the preceding sciences.

To measure the actual rapidity of this diminution, the limit of the preliminary stage should be regarded as reached at the point where a science begins to degenerate, and becomes an obstacle to the true progress of thought instead of an assistance to it. It will hence be obvious that the provisional system was necessary for a far longer time in Mathematics than elsewhere. The entire construction of deductive logic had to be effected in this science. Again, it had to develop the positive spirit at a time when metaphysical modes of thought were in the ascendant. Here were two motives for isolating the study of Mathematics; and the independence of its field rendered this possible. It was not till the middle of the last century that the special study of Mathematics became really retrograde. By that time all the essential discoveries of the science had been made, and yet the Calculus was advancing indefinite claims to universal applicability. It should be remarked that this was the time when the historical method was first applied to the science; Lagrange's incomparable genius having been largely influenced by it. This coincidence, as I before remarked, is not at all fortuitous. It is another of the marks by which the proper duration of the preparatory study of a science can be tested. Both tests unite in showing that the isolated mode of study was less obviously required, and for a shorter time, in Astronomy, and still less in Physics, than in Mathematics. In these three sciences the process of academical degeneration began almost simultaneously, owing to the temporary subversion of all philosophical discipline. The large interval of time which separates the period of their origin is thus a precise measure of the difference in the duration of their preliminary stage.

Without dwelling further on such obvious verifications of a well-established law, I shall proceed to its application in the case of Chemistry, which naturally is a still better illustration of it.

First rise of systematic

Attention has been devoted too exclusively to the culminating period of this science, and the real date of its origin is

placed too late. Attracted by the brilliant discoveries of Bergmann, Lavoisier, and Cavendish, we are apt to forget the great scientific value and logical force of the impulse given by Geoffroy, Boërhaave, and Stahl, who had gradually prepared the way for them. Besides, in crediting the newer Chemistry with having once for all introduced the Positive spirit into the higher departments of inorganic science, its merits are much exaggerated. The Caloric of Lavoisier is hardly less metaphysical than the Phlogiston of Stahl. The improvement, philosophically speaking, was simply that Caloric was introduced only to explain the physical accessories of combustion, which chemically was now shown to depend upon oxygen; whereas the older fluid had been made to explain both parts of this great phenomenon equally. Careful historical examination will place the birth of Chemistry as a systematic science at the point we should expect to find; that is to say, after Physics had advanced sufficiently far, about the close of the first third of the eighteenth century.

chemistry, under Boërhaave and Stahl.

But this modification of the ordinary view does not make Chemistry a less striking illustration of the encyclopædic law of which we are here speaking. Though shown to be of older date, as a distinct science, than is commonly supposed, it is yet so recent that the whole duration of its preparatory period is less than a century. For it is now more than a generation since the special culture of this science, which during the previous generation had been carried on with such admirable results, has begun to show every sign of academic degeneration, intellectual and moral, that we have found in other cases. The pneumatic theory was displaced even more rapidly than the phlogistic hypothesis which it subverted; but in this case nothing was substituted except the ephemeral doctrine of Electrochemistry. Striking as its philosophical influence had been, it lasted for no longer than half a generation. The direct study of the fundamental laws of combination, which Berthollet had so admirably forwarded, gave way before the disproportionate attention shown to the doctrine of numerical equivalence, which, however useful, was of secondary importance. The result has been to encourage, almost to the same extent as in mathematics, aimless and unmeaning speculations, suggested not so much by vanity as by hopes of personal profit. The noble generosity of Cavendish and Lavoisier has been superseded by a

Yet the proper period of its isolated culture has already past.

spirit of almost universal covetousness, more degrading really than that of the old transmuters of metals, because narrower in its object. What the degradation has been intellectually is sufficiently proved by the discreditable neglect of the principal work of Berthollet, the greatest of chemical thinkers. The ignorance of chemists as to his true philosophical position almost equals that of geometers in respect to Lagrange. In the empirical attempts to construct numerical formulas now so zealously prosecuted, no proper regard has been paid to his authority. Consequently, the only doctrine which gives a seeming coherence to modern Chemistry is one incompatible with the admirable theory of this genuine philosopher, that the rule of definite proportions holds good only of compounds which by exceptional circumstances had been withdrawn from the continuous action of chemical force. And here it may be remarked that the hieroglyphical phraseology which has thus become established in Chemistry helps to lower the scientific tone, and to encourage charlatanism. The degradation has now gone so far that most chemists share in it unconsciously, for want of any truer type of thought to which to conform. Indeed, they take pride in standing aloof from all general views, and in devoting themselves entirely to precision of detail; whereas the humblest of their predecessors endeavoured to connect all they did with some philosophical conception.

Urgency and possibility of discipline in Chemistry.

If this view be correct, and it can hardly be disputed, Chemistry, of all the cosmological sciences, is that which stands most in need of encyclopædic discipline. It is the most striking instance of the irrationality of disconnected study, which is more out of place here than in any other inorganic study. To place it in its normal position will require efforts of a peculiarly arduous and extensive kind, remodelling nearly all the primary principles of the science. Yet from the absence of coherent doctrine at present we may rest assured that the ultimate renovation of Chemistry will meet with but few obstacles. There will be nothing to resist except the empirical and ineffectual routine from which all true chemists even now are anxious to escape, although nothing but a sounder philosophy can set them free from it.

The submission of Chemistry to such a philosophy will follow from the need of systematic arrangement, which is so prominent a feature of the new popular education. All regular

instruction leads unavoidably to general views, and calls attention to the missing links of a system. But this is especially the case in Positivist teaching, in which Natural Philosophy will always be treated by men of encyclopædic training. Everywhere the effort will be made to form a clear conception of each leading science as a whole; to understand its proper character, and the way in which its essential truths hang together. In such teaching the disconnected investigations of our present chemistry would find no place. They will, it is true, supply, after rigorous philosophical sifting, the materials necessary for the normal constitution of the science. But it is only from this normal point of view that we can point out the direction in which new researches should be made, and carry out a systematic revision of the principal investigations of past times. What is required is that the student shall be enabled by preparatory training to form a right notion of the character and the subject-matter of chemical science. Now this condition is already fulfilled, at least for all who are competent to distinguish essential notions in the midst of a mass of irrational researches. Special facts exist in abundance to illustrate clearly the general scope of the science, and even the principal divisions into which it falls. That it has not yet begun to assume a systematic form is not due to the want of materials, but simply to the absence of philosophical principles and of the right social impulse. But as both of these will be supplied by Positivist education, the work cannot fail to be soon begun. Unfilled spaces must be definitely recognised at first; but these will gradually be occupied to meet the demands of Biology, and also those of our great industrial processes. Guided by these motives the philosophic mind will be able to distinguish amidst the indefinite developments of which Chemistry in the abstract is capable, those which are really deserving of human attention; rejecting without scruple the mass, far larger as it necessarily is, of indefinite and purposeless enquiry. Conceived and studied in such a spirit, this great science may always be explained with sufficient fulness in the forty lectures given weekly, which the Positivist programme assigns to it; and this allowing for a more detailed investigation than is now possible of its primary principles.

With the view of aiding such reconstruction, I subjoin a few remarks, first on the scientific character, next on the logical

principles, and lastly on the principal subdivisions of Chemical Science.

Unity of purpose in chemical science; prevision of compounds from knowledge of components.

The irrational spirit of modern chemists is the more striking and the less excusable, that it contrasts so strangely with the remarkable unity of which this science so obviously admits, and which cannot be concealed even by the most commonplace exposition of it. The object of Chemistry, as defined long since in my Positive Philosophy, is to determine the properties of the resulting compound from a knowledge of the components; a definition as clear, as precise, and as complete as that of Abstract Mechanics, which indeed is extremely analogous to it. Taking this as the general programme, we see at once the true character of chemical problems, the kind of solution of which they admit, and the conditions which they require. Rational prevision is seen here as elsewhere to be the distinctive feature of scientific enquiry. Even though the aim be rarely attained, it is essential to keep it constantly in view, in order to guide our meditations on the science, and estimate the real progress made. The Type in science, like the esthetic Ideal, or the technical Model, would miss its principal aim were it not somewhat above the actual, or even the possible state; although it must not depart from this too widely, as we recognised when speaking of the mathematical conditions of limits in general. Now this definition of Chemistry clearly satisfies the required conditions. On the one hand, it expresses the fact that the rational study of composition and decomposition is the object of the science. And meantime its ideal is not over-strained, since the problem proposed is already solved in a few important cases; as, for instance, in Berthollet's remarkable law of the double decomposition of salts.

Futility of distinction between organic and inorganic chemistry.

In defining the logical character of Chemistry, we may remark two primary conditions, which are obviously connected, and which, though now disregarded, follow directly from the definition adopted. These conditions, as explained in my Positive Philosophy, are first, the homogeneity of chemical doctrine, and secondly, the principle of Dualism. Natural and indispensable as these conditions may appear, they can only be satisfied by the encyclopædic system. The academic spirit, even while recognising their importance, will continue to resist them.

As to the first principle, the only difficulty lies in what is called Organic Chemistry. This will soon be seen to have no

philosophic foundation, and the obvious homogeneity of chemical science will then become apparent. It is by this irrational assemblage of chemical and biological investigations that the charlatanism of numerical chemistry is principally fostered. The only compensation for its incoherence is that it expresses in a confused way the intermediate position held by Chemistry as the point of transition from Cosmology to Biology. But though this is really the case, yet the fundamental contrast will always remain between the continuous instability characteristic of true vital actions and the essential fixity of the merely passive combinations to which the field of Chemistry, properly speaking, is restricted. The confusion introduced into science by these erroneous views will soon be set right under the encyclopædic system, in which vegetal life will form a distinct study. For it is principally from the encroachments of chemists on the study of nutritive functions that this incoherent body of facts has arisen; biologists, owing to insufficient training in Cosmology, not having been able to investigate them with sufficient thoroughness. Reduced to its proper limits, the science is concerned solely with fixed compounds, which, whatever their origin, are obviously analogous in all essential respects to those of inorganic Chemistry. But this irrational division of the subject must continue until scientific questions cease to be handled by mere biologists or cosmologists, and pass over to philosophic thinkers preserved by their encyclopædic spirit from exclusive devotion to any special department. Even now, however, most chemists admit that a separation of this kind disturbs the most important analogies in the science. Besides, the only arguments for it of any weight have been distinctly refuted in my Positive Philosophy, where I have shown that the principle of Dualism is always available, bringing these compounds within the range of numerical laws. It is, however, the exaggerated value attributed to these laws which induces modern chemists unconsciously to cling to this confusing division of the subject. And so strong is the underlying influence of encyclopædic conditions, that this simple reformation of the science, urgent though it be, cannot take place without an entire renovation of our intellectual point of view. It is consequently connected with the general diffusion of true social feeling, the only sure guarantee for comprehensiveness of view. Judicious readers will by this time be prepared to recognise the connec-

tion, which might have seemed paradoxical had I alluded to it earlier.

Dualism of combinations: a subjective artifice.

The second of the two logical conditions necessary in Chemistry is that all combinations should be conceived as dual; this dualism being regarded not as an objective law, but as a subjective institution. The legitimacy of this proceeding was fully established in my Philosophical Treatise. No objection has been raised to it; yet, important as it obviously is, it has remained as yet without result. Nor is this strange, since this reform is even more incompatible than the preceding with the provisional phase of Science; which is more trammelled by the metaphysical spirit in Chemistry than in any other department of Cosmology. The only point in which the logic of modern chemists is thoroughly Positive is their mode of regarding elementary bodies; remarking simply that they have hitherto not been decomposed, without venturing to call them indecomposable, and thus abandoning the pretension to absolute knowledge of their ultimate structure. Yet, starting with this sound principle, the greater part of their conceptions are even more tainted with metaphysics than those of the physicists. It is true that chemists have given up Phlogiston, while physicists are still bewildered with their ontological fluids. But Chemistry has only abandoned its special delusion to give more weight to those transmitted to it by Physics; so that logically the gain has been small. The last of our great chemists attributed more unbounded influence to his imaginary electric fluid, and with less real ground for it, than had previously been attributed to Phlogiston. Entities of the most palpable kind are still found lying at the root of so-called explanations of chemical phenomena. The most metaphysical of physicists have exhibited for a long time no absurdity comparable to the 'predisposing affinity,' which even the great Berthollet employed so frequently in Chemistry.

These incoherencies prove how impossible it is for special students of a science, when devoid of philosophical principles, to liberate it effectively from metaphysical trammels. In their blind repugnance to the controlling influence of any general system, modern savants are unconsciously tending to re-establish what they imagine themselves to have irrevocably destroyed. For their flattering dream of mere anarchy is one which cannot last. The only possible result, philosophically, of their one-sided

efforts has been a temporary reaction of criticism, discrediting the metaphysical system, but not replacing it; not therefore entirely destroying it. Thus each of the preliminary sciences is now degenerating into a useless and incoherent collection of facts; and can only be preserved from total dissolution by the universal ascendancy of the final science, resulting in the permanent substitution of the relative for the absolute system, the provisional necessity for the latter having ceased.

Objections to Dualism.

The question of Dualism in chemical combinations naturally recalls these considerations, with which my readers are already familiar. It is a conception essential to any further advance in the science, and which yet can only become recognised through encyclopædic culture. The repugnance to it arises from the mistake of imagining it to be a natural law instead of a mere logical artifice. Here, as everywhere else, the tendency to attribute objective existence to subjective conceptions is due to the absolute spirit. When we have become once fully convinced that all attempts to understand the ultimate structure of bodies are at once impossible and useless, we shall see that from the relative point of view Chemistry is perfectly justified in looking on any combination as binary. All that is necessary, whether in Analysis or in Synthesis, is to distinguish clearly between the elementary and the proximate mode of composition: a distinction admitted by all Chemists. A substance formed from more than two elementary bodies may be always regarded as the result of a binary combination, the component parts being themselves liable to one or more similar processes of decomposition. Chemists have already shown how, by the successful use of numerical artifices, bodies imagined to be ternary or quaternary can be brought under the binary system. On philosophical grounds we may assure them that all reactions which can fairly be examined will admit of similar interpretation.

Its utility.

The only shock given to our present habits of thought by this mode of philosophising is that it implies ignorance of the proximate composition of all substances which have not yet been brought under the dual system. The attempt so to bring them will thus give rise to a new series of reasonings and of experiments, with the view of distinguishing the various modes, often very numerous, in which, consistently with its elementary composition, the substance in question might have been formed.

Now these new problems, even before they are solved, will be certainly more profitable to Chemistry than the incoherent enquiries with which it has hitherto been occupied. And there is all the more reason for them that the anomalies to be explained are almost always in cases where the analytic agents used have been of a violent nature; and where, consequently, there is ground for supposing that the two proximate components have not merely been separated, but have themselves been decomposed. And this reasonable conjecture is fortified by the fact that most of these doubtful substances have an organic origin. Now as the combinations due to vital action are invariably feeble, the true components are never to be looked for in the elementary substances set free by our coarse methods of analysis, and requiring some very powerful affinity to reunite them. Thus we see that the views at present held prevent the adjustment of Chemical and Biological truths. The incoherence is especially striking in the case of so-called isomeric substances, such as gum and sugar, which, identical as they are supposed to be chemically, have so different a vital action. Dualism supplies a ready solution of such paradoxes, which otherwise would be at variance with the ascertained results of ultimate analysis.

Logical rule of the simplest hypothesis.

This reform in chemical reasoning is an application to the outer world, within the limits allowed by the law of Relativity, of a tendency inherent in the human mind. When once we have abandoned the search for absolute knowledge, we see that Truth, so far as we are concerned, consists in bringing our subjective conceptions and our objective impressions into sufficiently close adjustment; the degree to which this is done being, however, regulated by the social or individual necessities of the case. This adjustment, which gradually becomes more perfect as the evolution of both elements proceeds, leads us always to choose the simplest principles that adequately represent the facts. Now there is a spontaneous tendency in the mind to look on every combination, and therefore of course every decomposition, as being binary. Indeed, this is the only mode of union or of division which we find it very easy to conceive; the polygamic composition attributed to certain exceptional substances is apprehended indistinctly and with difficulty. The mental adjustment spoken of is not complete until we have reduced them to the binary state. Till then the mind

remains unsatisfied; and this feeling should be set at rest before we proceed to fresh investigations, which would otherwise be injudicious and confusing. Chemistry would therefore be failing in the most important part of its philosophical mission, if it should still reject the notion of Dualism, which from the relative point of view it is evidently open to us to adopt. Instead of regular and healthy growth, it could look for nothing but cumbersome accumulation of facts. For true Progress invariably depends on the maintenance of Order.

Analogy of this artifice to that of Inertia, or to Atomic hypothesis.

In fact this conception will ultimately hold the same place in Chemistry as Inertia in Mechanics, and the corpuscular hypothesis in Physics. These three great logical artifices are equally adapted to their respective sections of Cosmology, giving each of them the due margin of freedom to thought, and at the same time satisfying the fundamental conditions of their respective sciences. Dualism in systematic Chemistry is as useful as Inertia in Mechanics, or Molecules in Physics. As to objective reality, in the mathematical hypothesis there is certainly none. But this in no way interferes with its utility as a mental instrument, when properly used. In Physics the hypothesis is perhaps equally ideal, for we shall never really know whether the structure of matter is continuous or discontinuous, although the present feeling is in favour of the *vacuum*, and against the *plenum*. It is useless then to discuss the objective truth of Chemical Dualism. The question is evidently insoluble, and it in no way affects the logical legitimacy of an artifice so essential to philosophical reasoning in this science.

Logical necessity of Dualism in other subjects.

Constituted thus, the final division of Cosmology is an example of the way in which subjective laws may be verified and even revealed by objective research. Chemical dualism is the ultimate expression of a logical necessity prompting us to restrict all comparisons to two terms. It is a tendency as irresistible as those connected with the first and the third numbers, forcing the mind to look on trinity as a characteristic of a series, unity of a synthesis. Chemistry had been the only obstacle of any importance to the entire generalisation of dualism, owing to the imagined discovery that certain combinations were formed in a different way. A more philosophical examination removes this apparent contradiction, by placing us at the relative point of view from which we see that chemical study from

its very nature leaves a margin open in which we are at full liberty to adopt the dualistic mode.

It seems hardly necessary to dwell on the close connection between the principle of Dualism, and the principle, previously laid down, of Homogeneity. We have already seen that the compounds which it seemed most difficult to reduce to dualism are precisely those which at present infringe on the unity of the science. This connection, while it heightens the importance of each of these two reforms, adds also to their difficulty. It shows more convincingly that nothing but the encyclopædic discipline which is involved in social regeneration, can raise Chemistry above the chaotic stagnation which the academic spirit would render more and more hopeless.

Arrangement of the science.

The remaining portion of this attempt to systematise Chemical science may be disposed of more easily. We have simply to indicate the principal divisions into which the subject naturally falls.

Study of chemical combination.

The science should begin, as Berthollet saw so clearly, with the fundamental principles of Combination. But they will not be apprehended with sufficient depth or clearness unless preceded by a more thorough study than is now usual of the two modes of imperfect union; first, simple Mixture of liquids and gases; and secondly, what is still more important, Solution; the theory of which is still so obscure. These rudimentary degrees of affinity differ widely from the true chemical mode in respect to the proportions in which the components combine. In the case of the mere mixture there is no limit: in the case of solution there is a superior limit only: in true combination the limit is inferior as well as superior. There are other differences, but none of a perfectly general character; this, however, demarcates them sufficiently to form a scientific basis for their abstract study.

After this preamble it would seem from our philosophical definition of chemistry that we should proceed at once to study the fundamental properties of the different elementary substances. But on closer examination we shall see the wisdom of entering first upon the general analysis of our terrestrial environment, at all events of the two fluid media which cover the earth's surface.

2. Analysis of Air and Water.

Here, as in other cases, the historical evolution of the science throws light on the course to be pursued in teaching. The

analysis of air and water is the line of demarcation between ancient and modern Chemistry. It forms an epoch in Chemistry fully as important as the discovery of the earth's motion in Astronomy, since it wrought no less complete a change in the constitution of the science. Philosophically, too, the influence of the two discoveries has been almost equal. A conception of such importance should then be placed early in a systematic course of chemical teaching, and should even precede the study of the elementary bodies.

And not only is this discovery of paramount importance in itself, but no chemical phenomena can be fairly estimated without it. Very few compositions and decompositions, even of those that are purely artificial, are entirely removed from the influence of the Air or even from that of Water. Our view therefore of chemical facts must remain very confused until the nature of their two media has been directly investigated.

Its historical importance.

The history of the science seems to me to remove all uncertainty as to the precedence of this question over that of the elementary bodies. It is from the analysis of Air and Water that our most important notions with regard to the elements are derived. The views of antiquity as to the four elements, relatively to the time, were perfectly philosophical; they concentrated attention on those elements that were of the greatest importance. The conception was thoroughly positive except in the case of Fire, which even now is regarded in almost as metaphysical a spirit. The doctrine of the four elements, despised as it is now, was until the seventeenth century very rational. It is the ground on which I rest Aristotle's claim to be regarded as the first founder of abstract chemistry, previous philosophers having all insisted on the unity of matter. The error of the conception lay in its absolute character; but this was a vice scarcely to be avoided, being common at that time to almost all general notions. The confidence with which it was not unreasonably accepted explains the incessant attempts made during so many centuries to arrive at the transmutation of matter, which, notwithstanding our blind disdain, were quite as rational as most of the problems now prosecuted.

The fact, too, that the problem is one which suggests itself spontaneously to the individual as well as to the race, makes it undesirable to delay its examination. If the teacher begins by adjourning a question which occurs so naturally, the primitive

hypothesis will be formed by anticipation, heedless of formal scruples as to method, and will interfere with the clearness of his exposition. It will be impossible for him to enter on the description of the elements in a thoroughly rational way until he has carefully explained the compound nature of substances which every one at first takes for granted are simple.

Its bearing on Biology.

By opening our systematic course with the examination of the fluid media, we transfer to the relative phase of Chemistry those valuable subjective qualities which belonged to its absolute phase. Only thus can we bring forward with sufficient prominence notions which, whether in themselves or from their theoretical and practical applications, will always retain their importance as the foundations of the science. And we shall enhance the value of this plan by supplementing it with the general elementary analysis of organic substances. For, in fact, every living body must ultimately be in great part composed of the elements of air and water. These fluids invariably form an essential basis of its nutrition, and are constantly entering its substance; and they form, besides, almost the entire nourishment of the vegetable kingdom, from which, directly or indirectly, animals derive their solid food. Thus, at the outset of the course, the student will see at a glance the strong light thrown by the first discoveries of the science upon the general constitution of the material world.

3. Study of the elementary bodies.

And this impressive inauguration opens the way at once, logically as well as scientifically, for the consideration of the elementary bodies. This part of the subject may be so handled as to be an almost insensible transition from the preceding. As the most important of the simple substances are those found in the two fluid elements of ancient chemistry, so the rest are derived from the so-called solid element, the real plurality of which had been already suspected by Becher.

Philosophically, there is only one difficulty of great importance in the study of these substances, and this has been already discussed in my Positive Philosophy. That difficulty is the proper classification of the Elements. Several attempts in this direction have been made, of considerable merit, but which have failed even to point out the real object of the problem. Of all questions with which Chemistry, when reconstituted, will have to deal, this must be regarded as the most important. It requires profound thought upon the whole series of chemical

phenomena, since not only is this classification required for its own sake, but it should form the basis for a general classification of all compounds whatsoever. The work is thus obviously one of immense magnitude and fundamental importance. And it is one which none but minds of an encyclopædic cast can undertake with any prospect of success.

4. Study of compound bodies, arranged according to degree of complexity.

When once it is accomplished, the systematisation of Chemical science will be effected without difficulty. What the general principle of that systematisation is to be appears already from the two logical principles which have been already explained. Regarding Chemistry as a homogeneous system based on the principle of Dualism, the division of its subjects must depend on the degree to which the repetition of binary composition has been carried. As substances combine less easily when their composition becomes more complex, it would seem sufficient, even though we include organic substances, to establish three classes of compounds, of which the most complicated and least stable would be the result of three successive dualisations. These then, after the fundamental investigations of the earth's environment and of the elementary bodies have been completed, would form the three essential divisions of Chemistry, the object being to establish the abstract laws proper to each degree of binary combination. Thus we shall have in Chemistry a progressive series analogous to that already indicated in Cosmology as a whole, and, like that, resting on the great encyclopædic law which classifies all phenomena according to their increasing speciality and complication. Finally, we shall thus constitute the best possible transition from Chemistry to Biology, since the compounds contained in the last division will for the most part be really of organic origin.

Endless divergence of chemical studies as now pursued.

When the general laws of combination have been sufficiently determined in these three classes of compounds, Chemistry will have been rendered philosophically coherent, and the high aims of Berthollet, Guyton-Morveau, and Lavoisier, unfortunately forgotten by their successors, will have been realised. No further investigations of a special kind will be necessary, except such as are called for by the requirements of Biology and of industrial operations. On the supposition that the whole extent of this immense field were to be fully worked, the prospect of coming to an end would be the fainter that each compound, and the number increases rapidly with each successive

degree of complication, should be examined from three aspects. For amidst the varying proportions of which each combination admits, three cases should be studied specially; the neutral state, and the two extremes of saturation. But it is only a very small number of these innumerable compounds that will ultimately require scientific investigation. A few well-selected series will meet the logical requirements of the case, enabling us to discover the abstract laws regulating each order of composition. The useless diffusion of our present researches has less to do with the nature of the science than with the ill-directed character of the enquiries and the absence of philosophical views. It is needless to say that the present condition of Chemistry gives no adequate idea of its normal state as here described. Some faint glimpse of it is, however, visible in the study of numerical equivalents, though this is of secondary importance, and rests on an unsound basis.

With this general examination of the final state of the last of the inorganic sciences, this general review of the characteristic features of Cosmology comes to an end. In its mathematical basis we have studied our terrestrial environment in its most elementary mode of being; abstracting everything but the two simplest and most universal attributes, Extension and Motion. In this investigation of geometrical and mechanical laws, we have elaborated every essential method of deductive logic. On this basis Astronomy proceeds to build up the logic of induction, with the view of discovering the true planetary relations of the Earth. In Physics we enter on the more special consideration of the external properties of our environment; and in doing this we develop the inductive method to the full, and especially the most characteristic of its processes, Experiment. Finally, in the study of Chemistry we examine the highest and the most special properties of matter. Yet, important as the step is scientifically, it involves no logical progress, except the distant indication of the synthetic spirit and of the comparative method by which in a succeeding science the preliminary training of the intellect becomes complete.

Regarded as a whole, these three branches of Cosmology reveal to us the existence and activity of the Great Being, so far as inorganic conditions are concerned; beginning with those that are immodifiable, and passing to those that we can modify. Intellectually and morally they penetrate us with a deep sense

of the Order of nature, and we already begin to understand the adjustment of this Order with a regulated Progress. We are now too in possession of the preliminary knowledge requisite for the study of vital phenomena.

But though the scientific and logical examination of our terrestrial environment is completed, our positive training, laborious as it has been, is not yet far enough advanced to engage at once in the direct study of Humanity, in which all our scientific conceptions find their common meeting-point. We have still to assimilate the second element in the great dualism of Philosophy; to determine the true characteristics of the science of living bodies. This then will be the object of the last and most important chapter of this introductory treatise. After having examined the three essential degrees of Material Existence, the mathematical, the physical, and the chemical, we have now to proceed with still greater care to the investigation of Vital Existence; from which by a natural gradation we shall pass to the final goal of all rational enquiry, Social existence.

CHAPTER III.

DIRECT AND SYNTHETIC INTRODUCTION; BIOLOGY.

PREFATORY REMARKS, pp. 456–474.

THIS second division of Natural Philosophy is in every respect the most important. In fact the purpose, philosophically speaking, of Cosmology is to furnish the logical and scientific basis required for Biology. It is through the study of Life that the preliminary sciences are directly connected with the final science.

Relativity of knowledge now rests on Biology, as formerly on Astronomy.

With the Greeks the principal stimulus to the Positive spirit was given by astronomical discovery. In the Middle Ages its progress was more especially connected with chemical researches. But in modern times Biology has been the channel through which the last stage of its preliminary training has been conducted. By an inversion easy to explain, the substitution of the relative for the absolute, which began in Cosmology, depends now principally on the influence of Biology.

As long as men were generally occupied with the search for causes, the Absolute spirit assumed necessarily a subjective character, and found its stronghold in theories of vital action; inorganic studies giving meanwhile the stimulus to Relativity. But now that the study of causes is being superseded by that of laws, the tendencies of the different sciences have become reversed; owing to the faults inherent in the specialising mode of study which have been provisionally adopted. Cosmological studies standing alone and anterior to all others, tend, when cultivated in the present dispersive and exaggerated manner, to the restoration of the Absolute spirit under an objective form; whereas the subjective method of modern Biology is profoundly relative. It is in those of the lower sciences of which the field is the most isolated, and which are of earliest

date—in those, that is, which deal with the simpler and more general phenomena—that the degeneration is deepest and most rapid. They originated the evolution of systematic Positivism, but they could not carry it to the end of its preliminary period. To complete the noviciate necessary to train man's intellect for the direct study of Humanity was a task reserved for Biology. The irrevocable decline of theological beliefs, and the progress of the relative spirit towards ultimate ascendancy, which have been going on during the last hundred years, have been to an increasing degree dependent on biological researches, until Sociology, for which they were preparing the way, had become sufficiently advanced. The philosophical influence of Cosmology, on the contrary, in this last phase of the preliminary system, has been rather retrograde than progressive. Proud of their success in the application of Mathematics to Astronomy, Geometers were dreaming of absolute knowledge of the external world; whilst Biologists, standing at the subjective point of view, were studying the organic conditions of vital action, and were thus proving the inevitable relativity of all human knowledge. And meantime these biological researches were laying down the foundations of the methods and doctrines of which Sociology was afterwards to make use. They exercised a most beneficial influence on the whole method of regarding science, by encouraging that synthetic spirit through which alone it was possible to elaborate the final science.

Isolated study of Biology: rapidity of its degradation.

The services thus rendered by Biology to Positive Philosophy are now to be repaid by still greater benefits. The last of the preliminary sciences has done more than any other to promote the advent of the final science, and more than any other it will profit by its general ascendancy. Biology will be the first to assume, under the influence of Sociology, its final form; the result of the subjective method being that the order in which the Positive sciences are successively remodelled is the inverse of that in which they originally came before us. And the degree to which each science is ready for and stands in need of this remodelling depends upon a law explained in the preceding chapter, which regulates the duration of the preliminary system in each branch of Natural Philosophy.

In Chemistry, as we have seen, this preliminary system flourished but a short time, and sank speedily into utter degeneracy. And we shall find this to be the case to a still

higher degree in Biology, which rightly conceived is even less compatible than Chemistry with the academic mode of study. During the second generation of the eighteenth century, the combined influence of several independent thinkers, especially of Linnæus, Buffon, and Haller, was preparing it for the Positive stage. Further progress was impossible until chemical science had been to some extent consolidated. Then, based on these preliminary results, came the immortal efforts of Bichat, Lamarck, Cabanis, Gall, and Broussais; and the study of living bodies was at last carried on in the true spirit. These great works were condensed into the space of half a generation; they mark the last period of scientific thought properly so-called, as opposed to the normal condition of philosophical thought into which it should now pass.

High hopes were aroused, not unnaturally, by this brilliant outburst. But it was soon succeeded by a period of confusion and reaction, proving already the danger of special study in a subject where the need of encyclopædic thought was peculiarly urgent. Less narrow than the geometers, the biologists are yet even more irrational, since the education they receive is disconnected, not merely from the object to which their studies should tend, but also from the foundation on which they should rest. That Biology, objectively speaking, is subordinate to cosmological science is of course unquestionable. Yet biologists receive as yet no real training in the methods and results of mathematics, astronomy, physics, or even of chemistry. Consequently, whenever it becomes necessary to apply Cosmology to biological investigation, it has to be left to pure cosmologists, who are obviously incompetent for the task. It is the strongest instance in support of the encyclopædic rule, which reserves to each science the application to its own case of the preceding sciences. But, failing to fulfil the proper conditions, biologists content themselves with barren protests against the confusion and the materialism due to the encroachments of the physicists. Biology will continue to suffer from the objective usurpations of Cosmology until it recognises its own proper subordination, subjectively, to Sociology. At present the students of vital science will not allow that it should be regarded as a preparation for social science; indeed, they endeavour to set up this latter as a mere corollary or appendix of their own. As this leads them in their turn to encroachments quite as

vicious as those of which they complain, they have no ground to stand upon in maintaining the independence and dignity of their own field. Misconceiving the principal end subserved by Biology, they see in it no other utility than that of directing medical practice, from which it has never yet been sufficiently separated. Yet, though medicine is too restrictive to biological speculations, it is at present the only check to useless digressions, until the encyclopædic spirit has made itself felt. Moreover, medicine itself, if a more adequate conception were formed of it, would condemn this empirical disconnection of Biology from Cosmology and Sociology. For the study of cerebral diseases, whether mental, or, more especially, moral, shows at once the inevitable incompleteness of all conceptions relating to man as an individual, so long as they have not been systematically extended to social life, this being the only true standing-point. The consequence is, that this transcendental branch of medical practice, being less founded on principle than any other, is for the most part abandoned to men of superficial minds and coarse feeling. Whether, then, we look at the subject from its practical or its theoretical aspects, we find the positivist verdict with regard to Biology justified; namely, that its healthy state depends on maintaining its proper position in the encyclopædic scale, a position subordinated objectively to Cosmology, subjectively to Sociology.

Inroads on the fundamental principles of the Science.

The need of this philosophical restriction has become now extremely urgent. After the splendid start which at the beginning of the century illustrated the true genius of the science, Biology has rapidly sunk back to its condition in the time of Boerhaave and Stahl, a condition of miserable oscillation between a destructive materialism and a feeble spiritualism. Its most important truths and methods are alike in danger from this state of confusion and reaction. Its synthetic character, recognised since the time of Hippocrates, and still clearly seen by Barthez, Cabanis, and Bichat, is becoming more and more impaired by an academical system, which in its best days was never adapted for anything but the earlier branches of Cosmology. The metaphysical influences which at first put some check upon dispersiveness and speciality, have now a completely opposite tendency, especially in the country where most attention is paid to biological study. All generality of view, whether scientific or logical, is most seriously impeded by the

increasing success of mediocrity and charlatanism, to the pretensions of which it would be fatal.

Confused ideas of classification.

It might be thought that at least the hierarchical scale of life which forms the general basis of Biology, and is its principal title to our respect, would be beyond the reach of attack. But the irrational opposition offered to it by the inadequate and ill-trained minds to whom, in our present state of anarchy, biological studies are entrusted, has furnished a fresh proof how fragile every branch of scientific truth must be so long as it remains isolated. The superficial objections of a celebrated academician, who was rather a writer than a thinker, are held to outweigh the philosophical conceptions of Lamarck, Oken, and Blainville. Of the two logical principles on which the formation of the organic scale is based, the most difficult and the most important, that of the order in which the various natural groups should be arranged, is now thoroughly misconceived. The juxtaposition of species in accordance with the sum of their real affinities is still left untouched. But the same subversive influence would soon extend here also, since these two truths are obviously connected by the same underlying principle. But the restricting influence of Sociology has come in time to prevent biological classification from reaching this ultimate stage of decomposition.

Stagnation of cerebral physiology.

Coming to more special subjects, we find equally direct proofs that Biology is further from its normal state now than at the beginning of the century. Its transcendental branch, prepared by Cabanis and founded by Gall, has been for a long time in a state of discreditable stagnation. For want of any adequate principles to guide its investigations, it has become again a field for idle debates between empirical materialism on the one hand, and the cloudy spiritualism of ideologists and spiritualists on the other. The other extreme of the Science again—the study of Vegetal life—is abandoned even more than in the last century to the blind guidance of the chemists, who, even in their own sphere, have become less rational. Then, the principal students of chemistry were physicians; now, Biology is encroached upon by mere chemists unacquainted with the most elementary principles of vital science. In the first glorious days of modern Chemistry its biological pretensions went no further than to offer a hypothetical explanation of animal heat, which was speedily refuted by Barthez and Bichat.

Encroachments of chemists.

Now, degenerate as its condition is, it aspires to nothing less than the complete explanation of the phenomena of nutrition; and no biologist raises any adequate protest against such encroachments. As to the central part of Biology, that relating to animal life strictly so called, we can distinguish, amidst the useless accumulation of facts which encumber it, the same usurpation of cosmological science in the study of sensation and motion. These subjects are, for the most part, given up to the irrational handling of physicists; which, though less aggressive than that of the chemists, is not less fatal to the true progress of vital science.

These errors intensified in Germany.

In France, Biology enjoys less popular or official favour than Cosmology; and, in its present state of languor, the actual damage effected by this subversive and reactionary state is less clearly visible. But it becomes more apparent in Germany, where the multiplicity of scientific centres gives a factitious stimulus to biological pursuits. The discredit into which metaphysics have recently fallen in that country has hitherto had no result except to remove the last check which a certain generality of view had imposed upon presumptuous empiricism. But in the extremes to which Pantheism has been carried, any speciality, however idle, can assume without effort the decorous guise of system. Here it is peculiarly evident that biologists have become almost as incompetent as mathematicians to form, or to explain, the general principles of their science, and to judge of the value of new researches. So false is the conception here formed of the character and methods of Biology, that the decomposition of it now going on is not noticed. The history of the science is converted into a mass of useless erudition, with very rare recognition of the true filiation of discovery. A spirit of irrational pride, disdaining all that has been done in former times, regards the present degraded period of Biology as the true date of its origin. And it must not be forgotten that if these subversive ideas are less loudly proclaimed in other countries, the reason is merely that the science, being less encouraged, is less actively cultivated. The same logical and scientific fallacies are now permeating throughout the West, like the philosophical interregnum from which they emanate. This is evidenced by the unanimous admiration with which the ephemeral innovations of German biologists have been everywhere received.

Example of Blainville.

Among the many symptoms of this rapid decline, posterity will distinguish the melancholy fall of the last really eminent thinker of whom Biology can boast. In my philosophical treatise I have spoken so highly of Blainville, the worthy successor of Lamarck, that I am free now to deplore the utterly retrograde course adopted by him, and which, though for a long time it was limited to politics, extended finally to science. My former judgment had indeed been formed, not so much on what he had done as on what I knew him capable of doing. Still, his actual services have been sufficient to entitle him to the fame which I then ventured to promise. But his name, like that of Pascal, will always be clouded with the recollection of degeneracy even more complete and less excusable. Contrasting it with the noble example of philosophical firmness afforded by Lamarck, when octogenarian and blind, the impartial historian will see a striking proof of the fatal connection which exists, especially now, between every form of retrograde opinion. The man who did more than any other to systematise biological classification ended his scientific career by placing this fundamental conception under the disastrous patronage of theology, which for a long time has but compromised whatever it has assumed to protect. But the fall of this eminent biologist is still more strongly depicted in the only one of his works which he completed, with such assistance as was but too characteristic of his position. His example is a sad proof of the incapability of the mere man of science to understand the history of Biology, which, bound up as it is with the whole evolution of Humanity, should only be handled by minds of real philosophical power. The principal cause of Blainville's failure is not to be looked for in theological influence, which would only affect forms and details. The work in question, like others of the same kind, contains nothing in reality but a meaningless succession of biographical and bibliographical notices. There is scarcely any sense of historical filiation, and the judgments pronounced are often profoundly wrong. The universal weakening of biological philosophy could not be more clearly illustrated than by thus personifying it in one of the great thinkers who had helped to lay the foundation of the science. It was besides desirable to complete the too exclusive judgment which I had passed upon him before his scientific career had been completed; and to make this final verdict still more distinct, I have thought it

well to print as an appendix to this chapter, a speech delivered at the funeral of this great biologist, in which his mental and moral nature is more fully examined.

Need of sociological discipline.

Thus the science which when it first arose did more than any other to terminate the present philosophical interregnum, is that which is now suffering from it most severely. The analytical procedure under which the preliminary sciences were originally prosecuted, is now impeding the true progress of all of them. But Biology is especially affected by its empirical prolongation, so obviously incompatible with the synthetic character of investigations upon Life. As an isolated study, it should be strictly limited to what is necessary to prepare the way for the succeeding science. The interval here is naturally less than in other parts of the encyclopædic scale, and also it marks the final term in the series of Introductory Principles. On both these grounds the consideration of Biology as a separate science should be limited to such provisional treatment of its principal problems as would be necessary to render all its essential conceptions, whether logical or scientific, sufficiently comprehensible. This, in fact, is the only permanent result that can be gathered from these preparatory researches, the great mass of which are ill-conceived or premature. Now although not a single branch of biological truth can be considered as satisfactorily established, yet these conditions have been for a long time sufficiently satisfied to allow at last of the rise of Sociology. With it we have at once the new philosophical, or rather religious discipline, destined to regenerate in every department the scientific spirit, the preliminary action of which is now thoroughly exhausted. By such influence Biology will at last be renovated and rendered coherent. It will cease to be prosecuted except by thinkers of encyclopædic attainment, who will systematically reconsider all that has been done before, selecting what is necessary for the purposes of positivist education. It is only by such a course that this, the most important branch of natural philosophy, can be preserved from the utter disruption with which it is at present threatened. It may be hoped therefore that true biologists will not reject a controlling influence so beneficial in its nature, and of which in any case the social urgency is so great as to bear down any opposition that can be offered to it. The fact is that most scientific men of real power feel the oppressiveness of the present interreg-

num; the encroachments of the sciences lower in the scale than their own being very inadequately compensated by those which they are able to exercise on the higher sciences. None, however, suffer so much in this respect as the biologists. From their position in the encyclopædic scale they are liable to every kind of encroachment themselves, and can only take their revenge on social studies, which are too strongly entrenched in public favour to stand in any fear of them. The only true incurables amongst the savants of our time are pure mathematicians. The independence of their field saves them from invasion, whilst they can usurp the domain of others with impunity. Besides, they have nothing to expect from the new system except the sanction ultimately reserved for their successors. But sociological religion will not fail to impose the necessary control, the legitimacy of which is as evident here as in every other instance.

Distinction of organic and inorganic.

One truth only in the science of life, and that the most general has been left untouched amidst the general confusion; the fundamental contrast between Biology and Cosmology. This great dualism was finally established by Bichat: and though seldom grasped with sufficient firmness, it is yet acknowledged even by those biologists who offer the least resistance to cosmological encroachments. It is the only point left in which Positive Philosophy can count on special scientific support in systematising biological truth.

This conception is of modern growth, and to appreciate it rightly it should be contrasted with the older conception generally adopted from the times of Hippocrates and Aristotle down to those of Bichat and Lamarck. The true bearing of the change could not be understood until Positive Philosophy had been founded. It marks the profoundest revolution which the scientific spirit, properly so called, has ever undergone.

The first arrangement of Natural Philosophy was necessarily for a long time binary. Its two extreme terms arose almost simultaneously; they were alike related to the common needs of mankind, and they must always have invited systematic investigation from the sacerdotal castes with whom all our scientific knowledge originated. Wherever we turn we see on the one hand the germs of Astronomy, with the mathematical basis at that time inseparable from it. We see on the other hand almost at the same time the outlines of certain biological conceptions

stimulated by the practice of medicine. Between these two nascent sciences there was only one essential difference. The first occupied at once its true position in the encyclopædic scale, and therefore definite and immediate results could be obtained from it. The second, isolated from the preparatory trains of thought which lead up to it, admitted only of provisional results. The astronomical conceptions of Thales stand yet. The biological views of Hippocrates have required immense modifications. The biology of antiquity needed to be entirely remodelled; and nothing of its old form has survived, except the statical conceptions of Aristotle.

This first arrangement of scientific truth, being binary, exhibited all the essential features of a true combination; thoroughly corresponding to the synthetic spirit of the ancient philosophers. It was clearly seen even then that the second of the two elements, objectively speaking, was subordinate to the first. But there was nothing to fill the immense gulf between them except the conjectures of Astrology, which by exaggerating the direct connection, formed a close and complete link, utterly chimerical though it was.

Ancient conception of three kingdoms; a basis for an objective synthesis.

Corresponding to this arrangement of abstract science there was a remarkable concrete conception, the true philosophical import of which has never been clearly understood, although it was accepted for so long a time, and even now has hardly become obsolete. I refer to the well-known repartition of natural objects into three general and nearly equidistant kingdoms. All the encyclopædic arrangements of antiquity were modelled on this simple principle; and it is only since the recent advance of systematic biology that it has fallen into disuse. It was a necessary and immediate consequence of the tendency of the scientific spirit towards an objective synthesis, as contrasted with the subjective synthesis of Theology. We are here led to regard all nature as one whole, in which Life emanates from the World; whereas the essential principle of the old supernatural philosophy had been to explain inorganic phenomena by endowing them with life. Now there is always a tendency in the human mind to restrict a progressive series to three terms; extending to progressions in Space the habit which arises spontaneously in those of Time. And thus the conception of the animal, vegetable, and mineral kingdoms, founded though it be on an inadequate conception of

vital phenomena, constitutes an objective synthesis by establishing a certain continuity in the series of natural objects. Its true philosophical import appears in its invariable association with the dogma common to all theologies, the belief in an absolute source from which every kind of existence, natural or supernatural, has alike proceeded.

Rise of Physics and Chemistry showed objective synthesis to be impossible; subjective synthesis must await rise of sociology.

How profoundly this arrangement was modified in the Middle Ages has been already explained in the preceding chapter. A new term, Chemistry, was introduced between Astronomy and Biology, which were seen to be too far apart to allow of being associated as before. The old harmony of science was thus broken; since the study of life seemed no longer to depend on the study of the inorganic world. But meanwhile the true character of biological science became more distinctly visible. The first step in the construction of the true encyclopædic scale had now been taken, and natural philosophy was brought nearer to the subjective point of view, the only standpoint from which any permanent unity is possible. Yet no evidence of this renovating tendency could appear until the critical time, centuries afterwards, of the great discoveries of Physics. The two kinds of chimerical conceptions which had hitherto served as links between Astronomy and Chemistry were now rendered needless. A real continuity was established between the various preliminary sciences; and the progress made by each of them began to show more and more clearly the impossibility of constituting an objective synthesis, were it even limited to Cosmology. And yet subjective unity, which alone was possible, could not exist so long as the human mind remained under the sway of the theological principle, which aspiring as it necessarily did to Absolute truth, rendered the conception of Relative truth increasingly difficult. Consequently it is only in our own time, and through the foundation of Sociology, that harmony in our conceptions has become possible. The gradual process of eliminating theology is now complete. The subjective mode is at last made compatible with the objective mode; both being alike devoted to the study of Laws, and dissociated from the study of Causes.

That the principle on which the series of abstract sciences is arranged should be at the same time objective and subjective is what we should expect; since the conception of Humanity on which the whole depends combines both

characters. But the very nature of this conception implies that the objective aspect will always be secondary to the subjective; this latter, as I have shown already on several occasions, being now the more relative of the two. The perfect adjustment of these two aspects which will take place ultimately, will combine all the logical and scientific advantages of the binary arrangement of antiquity and the ternary arrangement of the Middle Ages.

Binary and ternary modes of expressing series of the sciences.

Nor will it in any way impair the homogeneous character of Positive Philosophy, to adopt indifferently either of these two modes, and apply them successively in every important investigation. In the education alike of the individual or of the race, the binary arrangement, that namely of Natural Philosophy and Social Philosophy, will be preferred: the first being regarded as the preparatory training for the second. Here Biology appears as separated from Sociology, and incorporated in Cosmology as part of the preparatory scientific training. But the point of view changes when the mind has arrived at maturity, and when, having sufficiently mastered the series of abstract sciences, it has now to direct its practical application. We shall now find that Biology must be given back to Sociology, as the first step in the study of human life. If, meanwhile, Cosmology be still regarded as a whole, the arrangement of science will remain as before binary, though under an altered form. Usually, however, the need of continuity will lead to a division of the study of the inorganic world into the two groups described in the preceding chapter; the mathematico-astronomical, which is unmodifiable and deductive, and the physico-chemical, which is inductive and modifiable. In this case the arrangement becomes ternary, the mode most appropriate to an ascending or descending scale. We have the same mode, only in another form, in the educational arrangement; Natural Philosophy will often be decomposed into its two elements, Cosmology and Biology. As to the division of each of the cosmological group into its components, this may be done in either of the two arrangements, wherever a more precise conception of the encyclopædic scale may be required. We get thus, as may be easily seen, several modes, each of which will have its own grounds of preference. The most elaborate, and that which will be usually adopted, is the division of the encyclopædic scale into six abstract sciences, needing no further

subdivision except for purposes of special investigation. But whichever mode be employed, the unity of the system remains unaffected, since the precedence is always given to Sociology as the only scientific and logical centre round which all departments of human knowledge can be associated.

Coalescence of the animal and vegetable kingdoms.

Contrasting this subjective synthesis of modern science with the objective synthesis of former thinkers, we see at once that the new order of the abstract sciences involves a necessary change in our concrete conceptions. Our mode of co-ordinating the various orders of phenomena cannot be altered without a corresponding alteration in our mode of co-ordinating natural objects. As the old arrangement of abstract science rested on the concrete conception of three natural kingdoms, so the new view will necessitate a new concrete division; that of the Organic and the Inorganic world.

The gradual advance to this final view depended on more exact investigation of vegetal life. As biological speculation became more rational, it began to be felt that the distinction between animal and vegetable, real as it was, was in no way comparable to the radical difference between vital and inorganic existence. More careful study of the true relations of things ended therefore in the absorption of the second kingdom in the first; what was at first a series being changed into an antithesis.

This great dualism has already been recognised as the necessary basis of a Positive Synthesis; because it is indispensable to the fundamental doctrine of Positive Philosophy, the invariability of natural relations. I have now to point out more distinctly how it prepares us for the final adoption of the Subjective Synthesis.

Distinction of Organic and Inorganic is the final blow to all objective synthesis.

The division of nature into three kingdoms satisfied the wish for objective unity, by allowing a gradual transition in the series of natural objects. But the radical contrast between Life and Death is incompatible with unity of this kind. The objects of nature can no longer be regarded as forming an absolute whole. To look upon organised beings as a mere result of unorganised, is as difficult as the inverse. Thus we are driven to the conception of two radically distinct orders, irreducible to one, so long as we look on nature in itself, irrespectively of Humanity. It is only in our system, or rather on our planet, that we need regard them as inseparable. Elsewhere

it is easy to imagine inorganic existence apart from organic, although the inverse conception is impossible.

This being granted, there is evidently no unity possible except through the subjective method; that is to say, by referring all our conceptions, whether abstract or concrete, to Humanity. Now the relative unity thus reached presupposes the entire abandonment of the study of causes, and the substitution for it of the search for laws; that is to say, for general facts. And further, even this search for laws must not be conducted with a simply objective purpose, for this would soon result in a return of the absolute spirit, as we see in the anarchy of the present day. The end in view must be no less subjective than the guiding principle and the point of departure. The power of rational prevision, in order to direct the providential action of the true Supreme Being, should be the only object.

Proximity in time of positive Biology to Sociology.

It seems then that the substitution of the organic and inorganic worlds for the animal, vegetable, and mineral kingdoms, destroying as it does the old synthesis of science, would leave nothing in its place, but for the fact that, in the necessary course of human evolution, the date of this change was very nearly synchronous with the appearance of the final science. Between the acceptance of this dualism and the foundation of Sociology the interval was hardly more than a generation. Evidently, however, in this historical coincidence there is nothing fortuitous; for the new concrete conception is intimately connected with the marked and rapid advance of abstract biology; and this led very speedily to the foundation of social science, which had been attempted previously in vain, although the urgent need for it had been long felt by all true thinkers.

The connection becomes more apparent if we consider how impossible any adequate appreciation of the vital state was, so long as the notion of the three kingdoms held its ground. To form an abstract conception of vitality is obviously impossible until we have previously gone so far as to include animals and vegetables in the same concrete division of nature. Thus we find, a century before Bichat, all eminent naturalists laying increasing stress on the essential similarities of these two kingdoms, and on their common points of contrast with the mineral kingdom. Even men like Linnæus and Buffon, who continued to embrace the whole range of concrete science,

allowed the consideration of life, in all its forms, to take precedence of inorganic researches. And, amidst the retrograde anarchy which is at present undoing all that has been done in biology, the most thoughtless advocates of change scruple to attack the trenchant reasoning in which Bichat demonstrated the fundamental antithesis between living and lifeless objects. Everyone feels, however indistinctly, that the dualism is ultimate, and that vital science would be impossible without it. The intricate explanation into which I have here been entering, shows it to be a necessary preparation for Sociology, and thus connected with the only means now available for reducing human conceptions to a common centre.

A subjective framework for our thoughts had arisen spontaneously in the primitive theological belief of mankind. Standing at a point of view widely opposed, Philosophy, properly so called, had attempted, from the times of the earliest Greek thinkers down to the time when it separated itself from science, to arrive at an objective synthesis in which Astronomy should be the point of departure. Twenty centuries, however, of fruitless efforts have led all minds of real power to abandon any attempt at unity of this kind. No true thinker hopes even to identify the three essential stages of inorganic existence, the mechanical, physical, and chemical. And yet in spite of previous failures, these useless attempts would never have been entirely abandoned but for the clear indications afforded by biological science. Here was seen at the higher extremity of natural philosophy an element of primary importance, which evidently was not reducible to the preceding. And its subsequent growth has been such as to hold out no hope of scientific unity except such as can be reached by the subjective method. It paves the way, meanwhile, for the reconstruction of this method by conducting us to Sociology as the substitute for Theology.

Error of old synthesis not in being subjective but in being absolute.

The more deeply we reflect on the primitive mode of human reasoning, the more evident it becomes that the only radical alteration required is the substitution of the study of Laws for the study of Causes. The fundamental defect, and that was inevitable and indeed indispensable, was not that it was subjective but that it was absolute. The coexistence for a long time of these two qualities has not prevented the former from leading to intellectual, and still more to moral results, of a most

important kind. Every synthesis ought to be subjective, since what is objective must always be analytic. But the preponderance of the subjective point of view is seen to be even more indispensable for the fundamental problem of subordinating the intellect to the heart. Both these necessities, which have hitherto existed unperceived, have been indistinctly felt by the ablest metaphysical writers of modern times, who saw how completely all attempts at an objective synthesis had broken down. Driven in the direction of subjective unity, they failed of reaching it only because their attempts were restricted to Man as an individual, instead of resting upon Humanity.

All that was needed then was that the subjective method, from being absolute should become relative; but a change so radical required for its accomplishment the long series of objective efforts that began with Thales and ended with Bichat. For the first condition being that the discovery of natural laws should be regarded as the universal object of study, it was necessary to begin with phenomena of the simplest kind, and from these slowly to work upwards to the more complex. The last step in this long course of training is now establishing the true form of subjectivity by substituting Sociology for Theology. The human point of view is restored to its true place; and, having become relative, its efficiency is greater and more direct than when, as formerly, it was supposed to represent absolute truth. And this final transformation is even more beneficial to the heart than to the intellect, binding as it does both together in permanent harmony. Objectivity, recognised as incapable of systematisation, is now limited to its proper function, that of supplying the materials with which Subjectivity is to construct.

Modern inversion of relative importance of Astronomy and Biology

To express then in another form the purpose of the long course of introductory scientific speculation which has just been brought to a close, we may say that it has simply reversed the order of precedence in which the two essential divisions of Natural Philosophy stood originally to each other. For the ancients, Astronomy was the most important of the sciences, and Biology took a secondary and subordinate position. The reason was that our mental progress was under the dominion of the objective spirit. In modern times Biology maintains, and will never lose, the first rank; Cosmology being regarded as an introduction to it. And this expresses the final preponde-

rance of Subjectivity in its regenerated form. And a farther indication of this change lies in the fact that it is the higher sciences which are now the source of the relative spirit; the only danger of a recurrence to the absolute spirit comes from the lower. Thus during almost the whole time in which the introductory phase of science continued, attention was directed principally to the outer world. Now that this phase reaches the point at which the systematic study of Life begins, it necessarily terminates, because it has attained its essential object, that of extending the positive spirit to the higher phenomena. Sociology now assumes its permanent position of supremacy, Biology being naturally regarded as its principal auxiliary. The primitive arrangement of Natural Philosophy is thus necessarily reversed by the restoration of subjectivity to its true preponderance over objectivity.

Exemplified by Descartes after failures of his objective and his subjective synthesis.

And the general course thus followed by the race should be reproduced in its essential outline in the systematic training of the individual. Cosmology alone takes up four of the five years which Positivist education devotes to the preliminary sciences. But the advance to Biology indicates that the objective preamble has come to a close, and points to the speedy advent of the normal state, in which the study of Humanity, based on the previous study of Life, is the central object. This ultimate direction of all regular education is well illustrated, historically, by the philosophical phases of Descartes' mind, of all past thinkers the best representative of the general progress and capacity of human thought. Descartes began by undertaking an objective construction more arduous than any which has ever been conceived. The impossibility of including the highest phenomena in his synthesis induced him subsequently to attempt to reach intellectual unity by the subjective mode; and hence arose the series of phases constituting modern metaphysics. Towards the close of his extraordinary career, perceiving the abortive nature of these two efforts, he began to concentrate attention on biological study, being already conscious of the precedence which they ought to assume over cosmological investigation. Into the field of social enquiry he did not venture; but there can be no doubt that his genius regarded vital science as the first step to a positive subjectivity capable of finally solving the problem of instituting mental harmony.

It was necessary to dwell carefully on the philosophical importance, still so little understood, of the great scientific revolution in which Bichat was the principal mover, and which transferred the first rank among the natural sciences from Astronomy to Biology. The reader is by this time aware that a necessary condition of such transference was the substitution of the concrete conception of organic and inorganic worlds for that of the three kingdoms. In spite of the unanimous opposition of cosmologists, both changes may now be regarded as irrevocable. All biologists have implicitly assented to them, even in the midst of their most confused controversies, and public feeling has supported them. They announce unmistakeably the entire conclusion of the introductory phase, whether by consummating the downfall of the old objective synthesis, or by opening the way for the subjective unity through which alone our conceptions of scientific truth can be rallied to a common centre.

Speedy reconstruction of Biology under Sociological auspices.

From all that has been here said it will be apparent that the retrograde confusion into which Biology has of late fallen, so far from pointing to the decline of the science, indicates the speedy assumption of its ultimate and systematic form. So long as this, the principal department of natural philosophy, remained isolated, without cosmological preparation and without sociological purpose, the study of it was necessarily conducted in an irrational way, admitting of no results, whether scientific or logical, but such as were purely provisional. The highest of these results was to open the way for the systematic culture of social science, by which all preliminary sciences are to be remodelled, beginning with the science of Life. Regret may be felt, and justly, at the decay into which these premature conceptions of biology are now falling; because several conceptions of real value are involved along with many others that have no sufficient foundation. But there is this advantage in the destructive movement, that it facilitates the process of reconstruction, securing it beforehand against opposition of any real stability. True biologists may feel perfectly assured as to the future of their science when they see how, amidst the utter confusion to which it is now abandoned, it yet maintains the entire ascendancy over Cosmology which was gained for it at the beginning of the century. As soon as they can bring themselves to recognise and appreciate the precedence of Sociology,

they will gladly welcome the encyclopædic training which it involves; feeling that while it does justice to the value of their efforts it saves them at the same time from cosmological encroachments. The only obstinate resistance to the new philosophical discipline will spring from mathematicians. It wholly deprives them of an influence to which they had no claim, and which will not be compensated in their eyes by the sanction which Positive Religion will give to their science, but which only true thinkers can hope to obtain.

Divisions of the Chapter.

I. Subject Matter of Biology. Abstract Theory of Life, pp. 474–517.

After this series of preliminary explanations I proceed now to a summary exposition of the mode in which Biology is finally to be systematised. I shall describe first the fundamental nature of the science, secondly the conditions essential to it, and finally the direction in which future progress is to be looked for. What I propose will in no way relieve my successors from the necessity of a treatise specially devoted to the subject. I have nevertheless to make my outline somewhat more detailed than was found necessary in any department of Cosmology. For while it is desirable to exhibit the regenerating influence of the new philosophy in the most urgent of its scientific applications, I am at the same time laying down principles indispensable to the immediate and primary object of this Treatise.

The logical and scientific representation of biological truth, must alike be guided by a systematic view of the general nature and the true field of the science. There is one advantage which this principal department of Natural Philosophy possesses over all the rest. It is the only one which has a name perfectly expressive of the whole range of its investigations. This at once indicates the synthetic character of the science. All its general aspects point obviously to a common problem, clearly indicated in its title, the construction of the Abstract Theory of Life.

Developing this definition and penetrating into its meaning, we shall find the object and the subject of Biology sufficiently explained. What we have to do is to form a clear conception of the general nature of Life, and of its principal degrees or modes.

Vegetal Life, pp. 474–482. General character.

Vitality in its most elementary form, that which alone is common to all organised beings, consists in the constant renewal of their substance. This is the one property which differences

them from all inert bodies the composition of which remains stationary. All other vital properties, even intelligence and morality, rest in the first instance on this nutritive existence, resulting as it does from the antagonising processes of absorption and exhalation carried on between the living mass and the environment. It were vain, however, to attempt to account for this invariable connection between the highest attributes and the lowest. There is no inherent contradiction in imagining that Thought and Affection might have been found in beings who exhibited no change of substance. Indeed all theological Utopias descriptive of a future state begin by emancipating Man from this necessity, and transferring our intellectual and moral powers to incorruptible bodies. Proceeding still farther back we find the primitive fetichistic faith endowing the most stationary and inert substances with the like attributes. But none of these hypotheses has received the smallest support from observation of fact. In no case do we find a trace of thought or feeling, or even the slightest rudiment of sensibility or contractility, unaccompanied by change in material structure. Not that this renewal of structure is not found in numberless instances where the higher phenomena are equally absent. It is evident therefore that the higher vital properties are not an inevitable result of the lower. They must, however, certainly depend upon them, since apart from this material basis they are never seen, and alteration of it beyond certain limits causes them at once to disappear. In a word, bodies are seen without a soul; but we have no knowledge of a soul apart from a body.

istics of Life 1. Restoration of particles; its connection with higher phenomena

Life therefore is not merely the attribute of special substances organised in special modes. It is an attribute which only belongs temporarily to the molecules which admit of it; so that an organism becomes inert and undergoes speedy dissolution unless the elements composing it are frequently renewed. Neither the speciality nor the instability are susceptible of explanation. They must simply be regarded as general facts, evidently true, but irreducible to a higher law. We shall never know why Oxygen, Hydrogen, Nitrogen, and Carbon are susceptible of life, whereas Chlorine, Sulphur, Iodine, are not. Nor can we know why vitality does not persist indefinitely with materials that have proved able to attain it. But the solution of these two mysteries is happily not merely impenetrable but

Vitality restricted to certain elements, and in these is temporary.

needless. Enough to regard both aspects of this primary fact as the scientific guarantee for the independent existence of biological science, the proof that its truths can never become a mere deduction from cosmological knowledge, although this has prepared the way for their investigation.

Moral and social bearings of the law of Renovation.

Following out this great biological law to its ultimate consequences, the positive philosopher will find in it the first general condition of true social existence. It is a direct result of this law that each of the independent organs of which the Great Being is composed, possesses that elementary feeling of personality which inspires such active efforts for self-preservation. Here arises the principal problem of human life; the problem of controlling strong individual impulses by feeble social sympathies. Here, too, lies the source of the providential action of the Supreme Being, subject no less than organisms of a lower kind to the permanent obligation of renewing its substance. And further we find this same necessity stimulating the benevolent sympathies by concentrating them on a practical object which combats their natural passivity. All these elementary conditions would be entirely wanting if Humanity were made up of incorruptible beings needing to take no thought for their own preservation. The full treatment of this question is reserved for the next volume; but it was desirable to indicate here the biological connections of the subject.

Connected with this renovation of material substance are two other attributes also common to every phase of life. The first of these is Growth, ending in the death of the individual; the second Reproduction, perpetuating the species. Every living body increases in size so long as the process of absorption exceeds that of exhalation. It decreases subsequently as the relation becomes inverted. It dies when the alteration of the adjustment between them passes a certain limit.

2. Law of Death.

The constancy of these three successive phases would seem to result from the natural antagonism between solids and fluids. Continuous recomposition can only be possible so long as their actions harmonise; and the equilibrium between them is one which apparently cannot become stable. But great suspicion should be entertained by students of the higher sciences with regard to these vague and also useless deductions. Whatever real foundation they may have is almost always due to unperceived

inductions which the abstractive process has not entirely cleared away. Analogies of this kind spring from habits of mind originally due to the metaphysical spirit, which was always imagining confused connections everywhere. And similar tendencies have been upheld and even developed under the prolonged influence of mathematicians, always disposed to place deduction above induction. In the higher speculations of Biology and Sociology they are calculated to do much mischief. External relations are far more contingent than suits our blind belief in universal correlation. The emancipation of the philosophic mind will not be really complete until we have entirely renounced those attempts to attain objective unity which are no less subversive than chimerical, and which do but tend to restore the absolute system under another form. The only unity really possible is the subjective; this alone lies within the compass both of our capacities and our wants.

Law of Death not a mere consequence of the preceding.

Accordingly in the positivist conception there is no attempt to explain Death as a necessary consequence of Life. In reality the connection between them is so far contingent that during the long infancy of the individual or of the race the tendency is to imagine Life to be eternal. In our normal state the certainty of death will be for the most part accepted only upon hearsay or from analogy, until decline has advanced so far as to bring the consciousness of it home to us. Death, therefore, should be regarded as a second biological law, equally universal with the first; presupposing it, but not necessarily resulting from it. The constant association of these two laws is indeed one of the general characteristics of organic existence as contrasted with the usual persistence of inorganic objects. But the difficulty so often found in clearly defining the difference between these two modes of existence corroborates our unwillingness to believe the process of dissolution, so seldom seen in the one case, to be necessary in the other. The renovation of substance common to all forms of life implies only that Growth shall be succeeded by Decline, unless indeed there were a perfect equilibrium between Absorption and Exhalation. There is nothing inconceivable in the supposition that these two processes should alternate successively in the same individual without any interruption of vital continuity. Therefore the general theory of Death, founded though it be on that of Life, is in reality entirely distinct from it. As yet it is even

more incomplete, having never formed the subject of a distinct series of enquiries. We may judge of this by the exceedingly imperfect state of our knowledge as to the conditions of longevity in the various parts of the zoological scale.

Sociological bearings of this law.

This second fundamental law of life has no less direct a bearing upon sociological phenomena than the first; as will be more fully explained in the next volume. To it is due that the Great Being is subject equally with inferior beings to the necessity of constantly renewing its component elements. Moreover, by an indirect reaction, already explained in my philosophical treatise, it constitutes one of the essential conditions of the continuous progress of the species, with which the immortality of the individuals composing it would be incompatible.

3. Law of Repr.duction.

Similar considerations apply to the third biological law, that of Reproduction. The faculty of Reproduction seems, it is true, more closely connected with the necessity of Death than does this latter with the Instability of material substance. Obviously, without this compensating power a species would speedily disappear. Numerous instances of individual sterility, especially in the higher animals, warrant the supposition that certain races may thus have perished from incapacity to generate. Such conjectures, though forbidden by theological optimism, yet fairly enter into the field of biological enquiry. It is thus a condition of the persistence of a species that its mortality shall be balanced by its reproductiveness. But this does not in the least explain how it is that every living organism should possess this wonderful power of bringing into existence another like itself. There would be nothing inconceivable in imagining that species might be preserved in some other way on the supposition that organised bodies were simply the result of inorganic forces. During the infancy of the human race such conjectures readily suggested themselves to the simple minds of fetichist or even of polytheist nations. They were afterwards excluded by the stringent restrictions of monotheistic philosophy. Still there have been thinkers bold enough to perpetuate these spontaneous hypotheses as philosophic truths. But though not in direct contradiction with any known law of nature, they have never been confirmed by scientific observation; the hopes which have so often arisen on the subject being always dissipated by more careful inspection. Waiving then all discussion on the absolute origin of Life as useless, we have simply to accept

it as an essential truth of relative philosophy, that each living body emanates from another like itself. No deductive process could have led us to the knowledge of this general fact; it rests on an immense series of inductions, and may now be considered as unassailable. It constitutes a third biological law, as distinct from the second as the second is from the first. It must be remembered, however, that each of these laws presupposes that which precedes, though not derived from it. If organisms were immortal their reproduction would be needless; indeed the difficulties implied in indefinite multiplication render the supposition impossible. So far there is a real and necessary connection between Reproduction and Death.

It cannot be explained by inorganic science.

Consequently the great aphorism of Harvey, *Omne vivum ex ovo*, is inaccurate only in specifying a mode of generation which does not always hold good of lower organisms. But under the modified form, *Omne vivum ex vivo*, it will always stand as one of the primary foundations of systematic Biology. This last of the primary laws common to life in all its forms is the final distinction between the lowest organism and every mode of inorganic existence. After all that can be said as to the analogy between birth and crystallisation, no philosophic mind can really regard one crystal as being *born* from another. The word *birth*, in its true biological sense, is inappropriate to bodies capable of unlimited duration and of indefinite increase; for these are, in most cases, the result of direct combination of their elements, the nature of the compounds from which these elements have issued being quite immaterial. In a word, the property of Birth is not less special to living bodies than that of Death. Here there is a new guarantee for Biology against cosmological encroachment. The more complete our co-ordination of vital studies, the more clearly shall we see the irrational and obstructive nature of all attempts to reduce all phenomena to a single objective source, and to look upon nature as an absolute Whole. The only point of view from which the facts of nature can be regarded as a whole, is their relation to Humanity.

Permanence of Species.

Rightly viewed, this third biological law puts an end to the well-known controversy, still really undecided, as to the permanence of species. Insuring heredity of structure for each generation, it thereby prolongs it through a succession of generations. The law in fact comes to this: that the integrity

of the type is preserved intact, whatever the number of transmissions. And this is why all those who have imagined species to be indefinitely variable, have been usually induced to adopt the supposition that living bodies, at all events those of the simpler kind, could be generated spontaneously by mere chemical action. Such paradoxes are not surprising in a department of science to which the positive spirit hitherto has only penetrated from below. Now that Sociology enables it to be admitted from above, the systematic revision of all preliminary researches will dispose of these idle controversies. They had, indeed, at first an indirect logical value in raising important questions and suggesting valuable conceptions. But this purpose will now be better served by the encyclopædic mode of study, which always leads us to regard the various branches of Biology as a whole. The opinion of the instability of species will then be regarded as a dangerous manifestation of cosmological materialism, due to exaggerated notions of the reaction of the environment on the organism, a subject which has never yet been properly studied. It is an error which would be wholly fatal to the independent existence of Biology; and this it is now of the utmost importance to maintain. As soon as the spontaneity of vital phenomena has been sufficiently recognised, it will be time to render the theory of Life complete by stating the modifications due to changes in the environment. But to introduce these supplementary questions prematurely can only result in confused discussions which will do more to obstruct than to assist the true progress of Biology.

It would be superfluous to dwell here on the sociological importance of this third law, since it is even more evident than that of the other two. We see at once the germ of what is the principal feature of the great organism, historical continuity. Viewed practically, too, the law of vital heredity is not less valuable as the first source of social heredity.

Combining these three fundamental laws of Life under the dual form appropriate to all combinations, we find in them the expression, first, of present existence; secondly, of successive development. Of the latter, there are two general results, Death and Reproduction; the second of which presupposes the first, though it does not emanate from it. The two parts of this dualism, viewed successively, constitute the system of the three primary biological laws; Renovation of substance, Destruction of

the individual, Conservation of the race. Each of these is subordinate to the preceding, yet does not result from it any more than the three astronomical laws of Kepler result from one another. Such then is the first scientific foundation of true biological philosophy. Its intimate connection with Sociology adds to its importance and stability, incorporating it among the elementary principles of the final Religion.

General remarks on Vegetal Life.

This universal mode of Life, purely material as it is, is the primary basis of all the higher functions, even of those special to Man. In it, too, we see in their initial form the relations, at once active and passive, of the organism with the environment, which supplies the materials for absorption and receives the products of exhalation. Fully to understand this phase of life it should be studied, first of all, in organisms which exhibit no other. Elsewhere the higher functions interfere with the clear appreciation of this fundamental function, although their reaction upon nutrition will call subsequently for careful examination. Thus the Theory of Vegetation is the basis, viewed objectively, of systematic Biology. Vegetable organisms are not less valuable for purposes of positive study than for our material sustenance. And not merely do they exhibit the nutritive functions apart from all the rest, but they show them in their greatest energy. Plants are the only organised beings which derive their total nourishment directly from the inorganic world. Other organisms are incapable of vitalising inorganic matter; they appropriate it only after it has been elaborated by vegetable organisms. Thus the separation between the higher and the lower functions, established so admirably as an abstract conception by Bichat, is borne out by the concrete fact that an immense class of organisms exhibit no phenomena but those of nutritive existence; that is to say, Growth, Death, and Reproduction.

Viewed objectively, these organisms form the first step in the biological scale, which can never be regarded as systematically complete, so long as they do not form a recognised part of it. From the subjective point of view they subserve a high purpose as the basis on which the elementary existence of Humanity rests. They may thus be regarded as ministering to the necessities of the Great Being, and merit our respect as the principal agents of its material providence. On them depends the possibility of combining the whole of living nature in a

vast and permanent struggle against the forces of inorganic nature. The worship of Plants, spontaneously maintained for so long a time, arose in a confused feeling of this participation. Grown obsolete since the fall of Fetichism, these simple instincts of reverence will be restored to their proper place by Positivism, which recognises the duty of appropriating all that is really valuable in former systems. All that is necessary for their incorporation into the final religion, is to transpose the objective belief to the subjective point of view. Thus transformed, these expressive signs give a new and nobler meaning to the commonest actions of life.

Animal Life, pp. 482–501.

But this initial form of vitality, fundamental as its relation with the Great Being may be, is yet too remote from the human type for any mind, however synthetic, to overstep the intermediate phase. It is necessary to interpose the conception of Animality between those of Vegetality and Humanity.

The study of nutritive Life, indeed, naturally introduces this intermediate subject, the phases of which, gradually increasing in complexity, render the transition more complete. In the general theory of nutrition we find two distinct cases. The elaboration of vital substance may be direct, or it may be indirect.

Its dependence upon Vegetable Life.

Every organism carries on the fluid part of its nutrition, whether gaseous or liquid, by direct assimilation of material from the inorganic environment. No vital apparatus, even in the vegetable kingdom, is endowed with sufficient chemical energy to produce for itself this portion of its nourishment. Water has often been said to be formed in biological processes, but on inspection the assertion has always turned out to be unfounded. This is the ground for asserting that Life cannot exist in a planet that has nothing corresponding to our twofold fluid envelope. But this mode of nourishment, though indispensable to the highest organisms, is sufficient only in the case of the lowest. Vegetables alone have sufficient assimilating power to form their tissues directly from liquid and gaseous material, with the help of certain earthy particles, also taken from the inorganic world. All organisms of a higher kind require, in addition to this fluid nourishment, the assimilation of solid substances; on these, indeed, their structure principally depends. Now, inorganic substances are too dissimilar in their composition to the organic to serve except as accessories to

facilitate the concoction of food, or at most to increase the consistency of certain tissues. It is in vegetable organisms, therefore, that all the others find, directly or indirectly, the means of solid nourishment. They act as powerful engines for the elaboration of nutritive material, compensating the feeble assimilative power of higher organisms by supplying them with materials that have already reached the first degree of vitality. This relation is the necessary condition of the development of the higher functions in the structures adapted for them. Without it they must either perish for lack of support, or waste all their vital activity in chemical processes. The only alternative would be, that their higher faculties should be combined with very great assimilative power. Now though this combination is possible to conceive, yet, as all observation shows clearly, it never takes place. The biological induction is, that in every case the advance of the higher functions is accompanied by a feeble condition of the lower. Our general theory of vitality points thus to a division of organised beings into two classes: the first, lower in the scale, but more independent when suitably environed, are self-sufficing; the second, of a higher and rarer kind, are incapable of subsisting without the help of the first. This biological conception conforms to the encyclopædic principle, that in all natural phenomena independence diminishes as the rank ascends.

First beginning of a biological hierarchy.

Thus the second mode of vitality is at once distinguished from the first by a system of nutrition rendering it more distinct from inorganic existence. For the primary function of renewal of substance organic aliment is required, inorganic matter being no longer sufficient. Thus in the great positive hierarchy which classifies objects as well as phenomena, Animals take rank above Plants, as being more special and more complicated. So far, the old concrete notion of the three kingdoms of nature was a rough outline of the true classification of things, although the mistake was made of raising a mere subdivision into a distinction of the first order. Animality presupposes Vegetality, although the latter is independent of the former. As it is easy to imagine worlds where no organic life is possible, so we may imagine others in which life is limited to the vegetal mode. This, indeed, is the case in the conjectures as to the successive epochs of our own planet; the accepted view being that vegetables existed for a long time without animals, preparing

the way for their advent. Such hypotheses may perhaps be quite imaginary, and are in any case of little value; they serve, however, to express the subordination in which, objectively speaking, animal life stands to vegetal. Regarding these two systems of vitality as successive, we have a biological progression which, at the outset of our investigations, clearly connects itself with the cosmological progression established in the preceding chapter. From the encyclopædic point of view, the transition from vegetal life to animal life opens out a vital series which, looked at either in the abstract or in the concrete, is essentially analogous to that formed by the three primary modes of inorganic existence. The latter series, however, is restricted to its three terms, the mathematical, the physical, and the chemical; whereas the series before us admits of, nay necessitates, far more extended development.

Sensibility and Contractility.

This primary conception of animality points at once to the two general attributes by which it is specially characterised. The necessity of feeding upon living bodies implies on the one hand the power to discover them, on the other the power to grasp them. Consequently the mode of nourishment by which animality is defined implies sensibility and contractility as necessary conditions. Without this twofold capacity for becoming conscious of, and for acting on, external bodies, animal existence would be obviously inconceivable. Hitherto we have considered the organism as entirely solitary; we now see it entering into constant relations with all around it. This is what we call the life of Relation. It has, however, at first, a purely individual character, being exclusively concentrated on the performance of the nutritive function, which always remains the fundamental attribute of organised beings.

Laws of intermittence and habit.

Between the life of nutrition and the life of relation the profound insight of Bichat has pointed out a striking contrast. Animal functions, as he shows, are intermittent; vegetal functions are continuous. This brings out more forcibly than ever the material preponderance of the latter. To make the contrast more complete it should include a mention of its necessary consequence, the twofold Law of Exercise, which is peculiar to Animality. In the first place the continuity of vegetal functions is incompatible with the sense of pleasure, even on the supposition that the plant possessed sensitive nerves; since pleasure always implies comparison, which here

is out of the question. It is the intermittence of the nervo-muscular functions which make possible the consciousness of exertion, and which consequently suggest the desire for its repetition. In the second place, such repetition, mainly regulated by nutritive conditions, calls out another attribute of animal life, equally incompatible with continuity of function; the attribute of Habit. Philosophically regarded, Habit connects itself with the great law of Persistence which obtains in every department of Cosmology, and is only modified in the vital order by the intermittence of the phenomena. It forms the necessary basis for the perfectibility of the individual; for this implies in every animal the existence of a nutritive system demanding a certain measure of theoretical and practical education; education, that is to say, of the sensitive and the active faculties.

These then are the links connecting the mode of alimentation peculiar to Animality with new biological laws applicable to a higher mode of existence, in which nutrition is no longer the direct object. The impressions and desires of animal life, though they have no farther scope than the requirements of the individual, have yet a less interested character than the mere vegetal instincts. A first step is taken in the direction of the human type when vital functions are no longer of a purely material kind. The organism is no longer satisfied with the purely individual process of assimilating material; sensation and motion are required, and these imply the possibility of co-operation without antagonism. In the intervals during which solid nutriment is not being absorbed, these higher wants may attain, within the limits admitted by the organisation, wide development, and may even promote union amongst individuals of the same species. Thus the Life of Relation, rising above the Life of Nutrition, kindles spontaneously the germs of social feeling in all cases where the moral nature is not too defective.

Instinctive life intervening between sensation and contraction.

To complete our view of animality under its most general form, there is a third attribute, to be introduced between sensation and motion, as being indispensable to their right adjustment. By a logical law frequently applied in former cases, this intermediate notion comes into view subsequently to the two extremes which it unites. Notwithstanding the light which Gall has thrown upon the subject, biologists are

still too apt to limit animal functions to Sensibility and Contractility, even in the case of organisms sufficiently elevated to concentrate their nervous functions in a true brain. Yet it is certain that the connection of these functions can never be strictly immediate, even in the lowest animals. There must always be, somewhere within the central organ, an intermediate mode of vitality, one which exhibits more distinctly than any other the peculiar spontaneity of animal life. This principle is affected by sensation, and stimulates motion. Its nature is for the most part moral; there is, however, in every case a certain mixture of intelligence, capable of judging the impressions conveyed by the senses and of determining the consequent actions. This, however, is invariably concentrated on the satisfaction of the dominant instincts, otherwise its action would be vague and deceptive. Of these internal impulses the only one which is strictly universal is that of Self-preservation, stimulated by the constant recurrence of nutritive requirements. Yet even in the lowest form of animal life this necessary self-interest is more or less modified by the mere exercise of the functions which it calls into play. Thus the physical existence of animals, rising above the merely material existence of the vegetable world, is always accompanied with a certain moral life which, in its highest form, becomes the principal characteristic of human nature.

Various modes of instinctive life.

Passing beyond the attributes common to every phase of animality, we come to the more interesting and also more numerous cases in which we find instincts of a less personal kind; admitting in the higher organisms of marvellous development. They relate to the function of Reproduction, the connection of which with that of material renovation I have already shown. In all animals high enough in the scale for the sexes to be completely separate, the preservation of the species involves association, temporary if not permanent, which not merely widens the range of the life of relation, but to a still higher degree elevates its moral character by raising it above mere personality. Even the species in which self-love is the strongest are modified by the gratification of instincts which, though individual, yet still imply some voluntary union. The life of relation makes here a farther advance towards the social state; the end of action not being in this case wholly personal. And this tendency becomes more apparent when another instinct

is called into play, also connected with the reproductive function, yet less widely diffused than the foregoing. When the product of generation needs constant and special care for its development, the Maternal instinct comes in to supplement and ennoble the social instinct. Both these propensities, concerned in the preservation of the species, modify more or less deeply, in most animal organisms, the primal instinct of self-preservation. They trace, in a way which is always striking and often admirable, the outline of the Family, the first foundation of social life. The intellectual faculties of the organism are called into play by an object which is no longer purely individual. Its vision is thus extended beyond the necessities of the present, thus arousing the sense of the connection of the future with the past. Ceasing now to be governed exclusively by personal instincts, life becomes susceptible of a certain moral discipline. It adapts itself to an External Order, the fatalities of which begin to be mitigated by affection.

Thus all the principal attributes which pride and ignorance have imagined to be monopolised by the human race are seen to be possessed in a more or less rudimentary form by the lower animals. Even where their degree of development is slightest, it is necessary, though often difficult, to note their existence if we would form a clear and philosophic conception of Animality. Without these internal qualities, which we class together under the vague term *Instinct*, no animal existence is comprehensible. For in that case the relation between external impressions and muscular reactions must be supposed immediate. Now this hypothesis would wholly do away with animal spontaneity, the essence of which is that it is determined by internal motives. It would be, in fact, coming back to the Cartesian notion of automatism, which, inconsistent as it is with the facts, has never yet been subjected to systematic discussion; and still, in one form or other, vitiates our higher zoological conceptions. Nothing but the encyclopædic spirit to which the new religion will give rise can rectify these serious aberrations, which are producing such confusion both in thought and feeling. Intellectually, they break at its first link the fundamental connection which unites humanity with the other objects of nature. Morally, their influence has been even more pernicious; justifying, as it does, contempt, ingratitude, and even cruelty towards the companions of our suffering and of

our toil. The true religion will set itself carefully to repair the mischief done in this respect by the theologico-metaphysical system since the fall of Polytheism. More complete and more real than Fetichism, Positivism will surpass it in its respect for animal life.

Connection of Instincts with mode of alimentation.

To complete our judgment of these various attributes we must examine the mode in which they are influenced by alterations in the mode of alimentation which we have seen to be characteristic of animality. All animals are nourished upon organic matter, but all do not feed directly upon vegetables. In most of the zoological orders there are many species where food is only indirectly derived from the vegetable kingdom, the direct source being afforded by other races of animals. The assimilating power being less, it becomes necessary that the alimentary matter should pass through a second process of organic elaboration before it can be incorporated. These organisms are therefore farther removed from the vegetal state, and are also highly endowed with the principal feature of animality. Sometimes it happens that these, too, serve a similar purpose with other still more highly carnivorous animals, who cannot assimilate solid matter till it has undergone a third process in these vital laboratories. This, however, is a case too exceptional to be of much interest in general biology. The case of carnivorous animals of the first degree is the only typical instance: and it deserves careful philosophical study not merely on this ground, but because it is the case of our own species. This, as will be hereafter explained, is not a merely fortuitous coincidence.

Possibility of modifying alimentation.

Hitherto no general law applicable to the whole animal series has been discovered which regulates the distribution of carnivorous and herbivorous species. They seem to be mixed together indiscriminately. Partly this depends on the incompleteness of the zoological scale as we have it at present. But it also indicates that this distinction, considerable as it is, must yet be regarded as subordinate to the more essential features of animal organisation. The time for appreciating it rightly has not yet come; and indeed theologico-metaphysical influence still prevents the question from being looked at in its true light. Supernatural optimism induces people to suppose that each species nourishes itself in the way most appropriate to its organisation. In reality the adaptation is not less imperfect

here than it is in all other cases. The principle under which they can all fairly be brought is that of the Conditions of Existence ; which, as here applied, indicates simply that the nutrition of the animal must be such as to save it from extinction. It is intelligible that the carnivorous organisation should reject vegetable nutriment, from want of power to assimilate it. But, as Buffon saw very clearly, the inverse relation is by no means so definite. Were herbivorous animals more energetic and better armed, they would not prefer the kind of food which it requires the greatest effort to assimilate. In this hypothesis their vast digestive apparatus would gradually diminish after a certain number of generations from want of use. Cows in Norway, in spite of their supposed dislike of animal food, find no difficulty in digesting the dried fish which is given to them in winter owing to scarcity of fodder ; the result being simply a change in the character of the milk. It would seem then that the mode of alimentation is not so fixed or so instinctively chosen as is commonly supposed; and this confirms the belief that, zoologically, it is a matter of secondary importance. Supposing, however, the widest scope of variation, the change could merely be from herbivorous to carnivorous, never inversely; since an organic apparatus, and especially the digestive, is far less susceptible of increase than of diminution. Looking at this question statically, we must consider the organism as a whole, not limiting our view to any special structure. And from the dynamic point of view, at which we must finally take our stand, we have also to take external circumstances into account, as these may greatly modify the system of nutrition that would otherwise be adopted.

Mental and social reaction of carnivorous alimentation.

But however this zoological question may be decided, no one can fail to see the importance of the distinction in every class of animals. It relates directly to the very property by which animality has been defined. The necessity of discovering the prey, which must be reached and vanquished, elevates simultaneously every animal attribute, internal or external. Its influence on the senses and muscles is too evident to need farther explanation. Reacting incessantly on the highest functions of the brain, it developes both the intellectual and the active faculties, their earliest growth even in our own species being always due to it. Analogous results are produced on the races attacked by carnivorous animals, through the less intense but

more continuous efforts required for defence. In both cases, and especially among the aggressive races, these conditions stimulate the first tendency to association of efforts, temporary or otherwise. In the unsocial races the alliance is limited to the family; in others it may include large troops. Thus it is that animals manifest the germ of impulses and habits which can only be matured by the Continuity peculiar to the most sociable and the most intelligent of animal races. Lastly, we must not forget the influence of the carnivorous state on the vegetal organs. Viewed physiologically it implies higher excitability, easier and less tardy digestion, more perfect assimilation; the result being blood of a more stimulating kind. Development of the higher functions is promoted in every way; the energy of the organs is increased, and more time is given for their exercise.

Three laws of animal life.

1. Law of intermittence.

With these remarks I conclude this rapid survey of the second great phase of vitality. Subordinate as it must always be to the first, it yet constitutes the principal field of Biology. Its systematic study should begin with a second group of general laws, also three in number; the laws of the intermittent functions peculiar to animality.

The first of these laws is the Alternation of action and rest, which is as essential a feature of animal life as Renovation of substance is of vegetal life. We find it in all the animal organs alike, whether nervous or muscular. The satisfaction of this necessity is what causes Pleasure properly so called; whereas Health is more particularly associated with the continuous action of the nutritive organs. It is in this intermittent action that we have the clearest evidence of vital Spontaneity, hardly to be ignored even by the most exaggerated materialism. The outer world is, however, still the basis of this higher mode of existence. It supplies stimuli to the receptive functions, and fulcra to the active functions, without which they could never be called into play. This is true of the highest organs as of the lowest. Meditation is only possible when Observation has supplied the data. Our propensities are more spontaneous in their action, but they take no definite shape except under the influence of their appropriate stimuli. The action of the Environment, however, is of a far less restricted kind in animal life than in organic life. It no longer consists in the supply of materials properly so called, but in the supply of Relations, which not being necessarily of an

individual nature, can be shared by many at once. We see therefore, at the very outset of this second phase of Life, the tendency towards the Social State as the ultimate goal, although it can only be fully reached by a single species. In the case of Humanity, whose every vital function is developed to a far higher degree of intensity, we find the production of material and the acquisition of personal property more specially connected with the continuous needs of organic life: whereas the intermittent necessities of animal life are satisfied at small cost and in common.

2. Law of Habit.

From this characteristic of intermittence we pass naturally to the second law of animality, the law of Habit, established with such clearness by Bichat. Habit, or the property of spontaneously reproducing periodic functions, is, as I have shown long since, not exclusively confined to organic bodies. To the Positive thinker it is but a special case of the general law of Persistence, which presents itself in mathematical relations as the first law of Motion. The tendency to reproduce certain vital phenomena spontaneously and in the absence of the source from which they originally proceeded, is essentially analogous to the property of remaining in any state, whether of Motion or of Rest, after the original impulse has ceased. The only difference of the cases is that in the special case where Persistence is transmuted into Habit, the functions are discontinuous. Now this transmutation is not strictly limited to living bodies. We find it also in Cosmology, especially in Acoustics, in the case of instruments which, though interrupted in their action, gradually improve by long-continued use. But this is only the first outline of a feature which in its full development belongs only to Biology, as do the conditions which correspond to it. In Organic Life, however, we do not find it. Here the functions are continuous, and we have Persistence without Habit. But in animal Life, where the functions are regularly and periodically discontinuous, the law holds good of all organs sufficiently pliable to reproduce internal phenomena notwithstanding the cessation of the external stimulus. But for this capacity animal life would be unintelligible. Its daily suspension during sleep would break off all connection between its periods of activity.

Imitation dependent on habit.

While on the subject of this second law of animality, I should mention the important addition made to it by Cabanis: the explanation which Habit gives of Imitation. Luminous

and profound as the analogy is, it requires, however, a restriction which it was not unnatural that this great thinker should overlook, not having had occasion to consider the cases where it applies. It is only of the sociable races that this relation holds good. Here, to use Cabanis's happy expression, the faculty of imitating others is a continuation of the faculty of Self-imitation. With other races the deficiency of sympathy prevents this connection from establishing itself. Consequently, the theory of Imitation, though not to be separated from the theory of Habit, is, biologically speaking, a narrower subject. But both one and the other hold good of our own species, and this was to Cabanis the essential point.

3. Law of Exercise.

From the second law of animal life we pass by a natural transition to the third; namely, that Improvement is the universal consequence of Habit. This law, like the other two, applies equally to every animal attribute, active or passive, internal or external. It holds good, with the necessary modifications, both of organs and of functions. Viewed statically, it implies that every apparatus of animal life is developed by constant exercise, and diminished or even atrophied by prolonged disuse. Viewed dynamically, it means that repetition, especially if it be periodic, renders each of the intermittent functions easier of performance, so that at last it goes on unconsciously or involuntarily.

The direct connection of these two biological principles is the first germ in animal life of what afterwards becomes so prominent in social life, the natural identity of Development and Improvement. Combining them, we get the true conception of Progress; a privilege limited to these two higher modes of vitality. It may be thought that we have the first germ of it in the modifications of which certain classes of Cosmological phenomena are susceptible. But closer investigation shows that, apart from the intervention of animal organisms, the alterations that take place in the physical or chemical sphere do not, in the true sense of the word, constitute Progress; resulting merely in an incoherent and barren sequence of changes. It is not until animate beings, and the greatest of them more especially, begin to make efforts to improve their external condition that we find a determinate character and a continuous direction given to these natural modifications, which indeed are often artificially produced by them. Thus the notion of material progress,

though apparently arising in Cosmology, belongs in reality to Biology, and is the necessary result of the third law of animal life. That the higher kind of Progress, that in which the organism improves not merely its natural position but its own nature, depends entirely on this law is too obvious to need explanation. This question belongs to Sociology; still, Biology exhibits in germ the humblest of its three phases. The nobler animals show distinct tendencies to improve their physical nature, especially with regard to cleanliness, as I have remarked in the General View. Their insufficiency in this respect is due far less to any special inferiority than to the want of mutual concert and of suitable instruments. What belongs exclusively to our own species is intellectual and moral progress, this being due solely to the Social State.

Hereditary modifications.

To complete the third law of animality, we must consider it in relation with the third law of vegetal life. Their combined action results necessarily in the gradual elevation of the race. Every kind of improvement, static or dynamic, that has been realised in the individual, tends to perpetuate itself by generation in the species. Thus by Heredity, modifications that were at first artificial are rendered spontaneous. Although the development of this valuable property is necessarily reserved to our own species, it is important to recognise its biological source, of which all the higher animals afford illustrations.

These then are the three fundamental laws of Animality. Their small number and their close relation with each other give such coherency to the science with which they deal as might be expected from its synthetic character. But the vast variety and complication of functions and organs makes it desirable to point out distinctly the mode in which the existence of the organism as a whole is brought into harmony. It is only in animal life that such a consideration is necessary. Vegetal life is in fact restricted to a single function, performed by a tissue in all essential respects uniform; so that the consensus of the individual is easily maintained, and requires little effort to conceive. But in animal life the case is widely different. Unity, whether from the statical or dynamical aspect, is difficult both to maintain or to represent to the mind, where so many intermittent phenomena, sensitive and muscular, internal and external, have to enter into combination.

Consensus of animal life:

The first condition of the required harmony is that every

resulting from subordination to vegetal life.

aspect of Animal life is directly or indirectly subordinate to Vegetal life. The various animal organs, whether sensitive and motor, or intellectual and moral, are, as a rule, only called into play to preserve that elementary mode of vitality on which they rest. Their action affords, it is true, within certain limits, some special and immediate satisfaction apart from this general and ultimate object. But without this object it can never become regular and sustained. Even when it is not kept directly in view, a spontaneous preparation for it is going on; an education, in the true sense of the word, whether of the individual or family. But the necessary relation of these two essential modes of vitality admits of two modes of Unity widely different. The efforts for preservation may be either of a personal or a social kind. The organism acts usually under the stimulus of some desire; and it thinks only for the purpose of acting; so that its whole existence is subordinate to the preponderating propensity. Now this motor force of desire may be either egoistic or sympathetic. The full development of the second mode takes place only in our own species, but the germs of it necessarily exist in other animals.

Two modes of this subordination.

1. Personal mode.

In the lower part of the zoological scale, up to the point of complete separation of the sexes, only the first mode is possible. In these animals vital harmony is attained with almost as little effort as in plants. The instinct of Self-preservation, being identical with that of preservation of the race, is left undisturbed in its preponderance. There may, indeed, be some slight traces occasionally of the Social instinct, such as are found in several species of a grade hardly superior. But in that case they must remain undeveloped for want of any proper sphere. It is only when the efforts for self-preservation are suspended by the necessity of providing for the preservation of the race, that the animal can be said, temporarily at least, to live for others. This new phase of existence implies therefore perfect separation of the sexes; it implies, too, that the young shall be to some extent reared by the parents.

The Sexual and Maternal instincts having thus arisen, necessarily modify the Nutritive instinct, especially in the female. The result is that we have, at all events for a time, something that deserves the name of family life. So long as it lasts, it exhibits that second and higher phase of vital harmony in which the faculties, instead of being concentrated on the individual,

are devoted to the family. We see most striking instances, even in males, of utter regardlessness of self in the effort to preserve the young. All the powers of thought and action are given in these cases to the service of domestic love. The mental inferiority of the lower animals prevents that divorce between the intellect and the heart which is the great obstacle to vital unity in the case of Man.

All vertebrates, and the majority even of articulate animals, attain, more or less perfectly, the domestic state. But the general results differ widely in the social and in the unsocial races. In the latter, and they are the majority, domestic life lasts for a time only, and has no permanent influence. Here the vital harmony still preserves the egotistic character which we found in beings of a lower grade. The intellectual and active powers are only called out for purposes of self-preservation; the method adopted being aggressive or defensive, according to the mode of nutrition. In carnivorous animals this permanent egotism is often carried to the degree of cruelty; the unity of impulse not being disturbed by any antagonistic feelings. Apart from the periods of sexual desire or of maternal activity, the tiger, and even the tigress, and still more the crocodile or boa, are wholly occupied with themselves. The moment that individual wants have been satisfied, they fall back into mental and bodily torpor. With them the animal functions simply subserve the purposes of their organic life.

2. Social mode.

But with the social races it is otherwise. It is indeed only in the human race, from reasons to be examined afterwards, that we find the Social State fully developed. Still, the happiness of living for others is not entirely monopolised by Man. Many animals possess it likewise, and indeed give evidence of a higher degree of sympathy than our own, although the practical results of it are not so great as with us. In these higher races a careful distinction should be made between social and domestic feeling. George Leroy has pointed out very clearly the contrast in this respect between the dog and the stag, and there are many other instances not less striking. When domestic affection preponderates, the only effect of the social instinct is to render the family life permanent: whereas, without this motive it would be temporary. The charm of this simple mode of existence, and the absence of any wider sphere for the social instinct, confine its function to the secondary purpose of strengthening

the domestic feelings. The social sympathies have no deep influence except with races analogous to the canine; and in these the conjugal and parental affections are weak.

Association of animals with man.

In this last case the only way in which the animal can satisfy its sympathetic propensities is by giving itself up entirely to the service of a higher race. But for this alliance to be effective it must be individual; there can be no collective union between the two species. If the inferior animal be carnivorous, it may then become a military ally, even against members of the same species as the master whom it has chosen. For reasons easily understood, it is always our own species that is selected for this kind of association by all animals capable of it. Indeed we are often incommoded by animals associating with us against our wish. Whatever has been said to the contrary, there can be no doubt that this association is voluntary, since most of the races that adopt it might withdraw from it easily, were it on the whole repugnant. So far from there being anything degrading in this free submission, it indicates the same kind of wisdom as that which leads men to seek frequent intercourse with their superiors. Under theological systems the highest aspirations of men were to live ultimately with gods or angels. Is it strange that a dog or a horse should seek to associate themselves with beings of a higher order than themselves? Pride alone could deter any being from a connection so sure to satisfy his noblest sympathies. Here then in the animal kingdom is the first spontaneous form of the great sociological principle that all permanent union between independent beings must rest upon Love.

Thus although Egoism is the more ordinary basis of unity amongst animals, there are still many races which approximate through Altruism to unity of a nobler and more beautiful kind, and also more complete and more durable. Exceptional though such cases be, yet as Buffon, who has so ably appreciated them, remarks, they deserve the most careful study from a philosophic and even from the social point of view, independently of their scientific importance. For such animals should be regarded henceforward as accessory members of the Great Being, a title to which they have a far higher claim than many useless members of the human race who have never been anything but a burden to Humanity. Those who doubt this should think of the privation that Humanity would suffer even now by the loss of these subordinate allies.

In ancient times, when their services were more recently acquired and more fully appreciated, Fetichism, and subsequently Polytheism, also showed in their own way a just sense of the value of this alliance, and regarded it as one of the essential sources of human greatness. But the simpler beliefs of early days have been swept away by the more ambitious visions of monotheistic and metaphysical philosophies, which have injured the heart no less than the intellect. This long-continued error will be carefully avoided by the final religion. The true dignity of animal life will be reasserted as a practical and philosophic truth. The reality and the utility which distinguish Positivism both imply that the elementary feeling of universal brotherhood shall be extended to all beings found worthy to associate with Man. And we shall be benefited by the addition no less than they; for it will give a purer and more vivid character to the sympathies which we desire to encourage. In promoting this result the new priesthood will soon be supported by popular feeling, which even in Christian times always resisted the orthodox view as absurd and egotistical. A remodelled education will thus easily establish the true estimate of the social races as allies indispensable to our researches and occupations. So long as Biology remains an isolated subject, the protests of theologians and metaphysicians against the attempts to identify man with the lower animals, not without much validity. But when Biology is subordinated to Sociology, this comparison will be recognised as the true explanation of human greatness. Varying the candid expression of a hero who knew what ambition was, we may say that it is better to be the first of animals than the lowest of angels.

These inferior servants of Humanity should be estimated in Positive Ethics on the same principles as her higher organs. Besides the service actually rendered we must look at the intrinsic worth, physical, intellectual, and above all moral. The devotion of the strong to the weak should extend to the humblest creatures that are capable of sympathising with our affections and assisting our labours. Until thus embracing its full range moral feeling will fall always short, even in the case of man, of the energy necessary for its purpose. Inclined as human nature is to the preponderance of egotistic propensities, acts of cruelty and habits of indifference to animals render us liable, as our most distant ancestors truly felt, to utter de-

moralisation. Being too ourselves carnivorous, it is the more necessary to take stringent precautions against all that tends to excite the sanguinary instincts which in the best of us are always lying dormant.

Biocratic League under the leadership of Humanity for development of Earth's resources.

In the conception of this association between Humanity and the races capable of domestication we have the scientific basis for the widest and most permanent aspect of Positive Polity; the combination of organic nature against inorganic nature for the purpose of developing all the resources of our planet. The Great Being here presents itself as the chief of a vast league, in which the higher animal races are voluntary agents, the vegetable orders material instruments; the inorganic forces, so far as they are subdued to our service, being joined on as blind auxiliaries. The organisation of this reaction of Will against Necessity will mark the establishment of the final phase of social life; and during each preliminary phase the preparation for it has been advancing. Each race of animals has in fact been struggling for exclusive dominion over the earth, as each people has been struggling to subdue all others. But both these contests necessarily cease at the same time. When the existence of the true Great Being has once been sufficiently assured, by bringing all essential organs into harmony of thought and feeling, its universal preponderance puts an irrevocable barrier to the partial conquests of every other race. Animal Unity will thus gradually establish itself by the same process as human Unity. Those that are capable of rallying round the central organ will increase in number; those that are incapable of discipline will become extinct.

Elimination of useless or noxious races.

Our ascendancy over other races has hitherto only shown itself spontaneously; yet already many antagonistic species have given way before it. All those from whose hostility there is any real danger will no doubt soon disappear under a wise combination of efforts. Only such races will remain as are harmless, and especially those that are of real utility to us materially, physically, intellectually, or morally. These will be widely propagated, and will also be rendered more perfect by the providential care of the Great Being, by whose sole care many of them have already been saved from utter destruction. Similar efforts will also restrict the vegetable kingdom to such species as in one way or other are desirable for man's use, or such as serve to nourish the companions of our destiny, the assistants in our work, and the laboratories of our food.

All organic nature, united under one head, will then be constituted into an immense hierarchy, whose continuous action will increasingly modify the special constitution of our planet. Such modifications are no doubt limited by all the cosmological laws to which biological laws are objectively subordinate. Human providence will never be able to wield the mechanical energy requisite for changing any of our astronomical conditions, whether statical or dynamical. Our efforts must always be restricted to the region of physical and chemical forces. And even here the margin of possible improvement is very secondary. On the two fluid envelopes of the Earth no effect can be produced, and the alterations of its solid crust can only be superficial. Powerful as organic nature may become when its forces are rendered fully convergent, yet the enormous preponderance of inorganic matter will resist even this combination of efforts, and at a very short distance from the Earth's surface its results must remain imperceptible. It is of the highest importance intellectually, and even morally, that we should keep these insurmountable limits constantly before us. Such thoughts give concentration to our efforts, and keep pride within bounds. Positive Science has freed us from the oppression of spiritual terrors and from chimerical scruples. But this very freedom would render us liable to wild projects and mad presumption, were not such tendencies easily checked, as here indicated, by systematic education. Not that we should attempt to check the natural growth of reasonable hopes, measured by a subjective rather than an objective standard. Small as the total sum of changes may be which Humanity can effect in her planet, they are to be looked at in their influence upon her own destiny; and from this aspect modifications may be valued which otherwise might seem of no account. Owing to the irrational isolation of Biology as hitherto studied, its great founders have sometimes fallen into errors from which an encyclopædic education would have easily guarded them. Thus for instance, the naïve imagination of Lamarck formed most exaggerated notions of the geological influence of plants, and still more so of the lower animals. Still the results already obtained under unfavourable circumstances warrant a high estimate of the extent to which Human Providence may improve our terrestrial environment in matters which really concern us. On this subject the admirable descriptions due to the synthetic genius of the naturalist who

Limits of the power of this league.

so thoroughly grasped the true subjective point of view, will always be re-read with pleasure.

Biocratic league presupposes Sociocracy.

The reason why this vast Biocracy, in which the domesticable animals are our principal servants, has not as yet been fully constituted, is that the human race had not fully formed their own Sociocracy, and therefore the presiding element has been wanting. So long as most of our energies, theoretical and practical, were wasted by Theology and War in absurd speculations or in miserable strife, the organic world was wanting in unity; and its reaction on the inorganic world was much impeded by the intestine discord of its own component elements. But now that vital energy is rendered convergent and systematic, the result will assuredly be far superior to anything yet attained. Concentrated thus, it forms, on our common planet, the sole source of continuous Progress, Material Order meanwhile depending principally on the unchangeable preponderance of the inorganic forces.

And the internal arrangement of this final Biocracy, no less than its external action, depends on the general movement of the human mind. So long as men imagined themselves exiles on the Earth they were not fit to be chiefs of animals who were permanent inhabitants. So long, too, as men were constantly engaged in killing one another, it was impossible for them to feel and act properly towards subordinate races. But under the positive system the co-operation of all biocratic organs in the same cause, and the just sense of their fraternity, will place each in the position due to his share in the common service rendered to the true Great Being. In a word, Biocracy and Sociocracy will be alike pervaded by Altruism; whereas during the long period of theological and military training Egoism predominated.

Thus it is that Biology in its remodelled form raises us to a point of view from which the true policy of the human race, nay of the whole animal kingdom, stands before us; a policy in which the whole forces of the living world are combined for the social regeneration of Man, who in his turn becomes responsible for the wise government of the other races. There can be no doubt that the great Buffon, from the character of his genius and the general course of his studies, had begun to approximate to this conclusion. He went as far as was possible in a time when the old modes of thought were still nominally

in the ascendant, and when sociological conceptions were utterly unknown.

We have now completed, in a summary yet systematic way, our philosophical survey of the second great mode of Vitality. Involving as it does necessarily the first, it forms the special field of Biology, which has now, therefore, been sufficiently indicated. But the succession of these two modes exhibits two terms of an organic series which cannot be properly defined until some distinct conception has been formed of the third term. It belongs properly to a higher science; but a general notion of it should be formed in Biology as a preparation for its more distinct study. Humanity succeeds to Animality, as Animality to Vegetality. This, in its synthetic form, is the Hierarchy of Life; and on this triple foundation the analytical processes requisite for a more detailed view of it should rest. We shall inevitably fall into vague and useless speculations and interminable disputes, if we attempt to construct the second term, the series of animal life, independently of the first and of the final term. To do so would be to build at once without foundation and without purpose.

Social Life, pp. 501–508.

I have explained how, starting from the general definition of Life, we pass from the vegetal to the animal mode by a mere modification of the system of nutrition. The transition from the animal to the human or social mode is even more direct and definite. It consists simply in development of the internal functions of the brain. These high functions, moral as well as intellectual, form in all animals alike the centre of the Life of Relation. They are the term which impressions from the outer world ultimately reach, and the source from which the reactions of the Will proceed. But in most animals these functions are essentially personal in character. They never rise above the necessities of organic life, being directed simply to the preservation of the individual, and at periodic intervals to that of the race. Many species indeed possess the higher quality of sociability; but it is only in the human race that it is seen in full development. Nowhere else do we find its two characteristic features, the Union of contemporaries and the Continuity of successive generations. Yet the faculties of judgment and of action, in which animal life, properly speaking, consists, all tend in this direction. Even the external functions of the brain suggest naturally some nobler purpose than that of

Tendency in all animal species towards formation of a collective organism.

discerning and of grasping food; since plants feed themselves without requiring any of these higher powers. The principal utility of the senses and muscles is, that by their means we are enabled to know and serve those of our own kind to whom love is due. It is only when this vast and stimulating purpose is kept constantly in view that every organ of animal life, external or internal, can reach its full development. In a word, the final tendency of every animal race would lead to the formation of a Great Being more or less analogous to that which, in the General View, has been already described under the name of Humanity. But this tendency, though common to all races, could, as I shall now explain, only be matured in one. In every other race the highest effort of animality is rendered abortive, and only a few scattered traces of it are visible. Animal life remains limited to the function of supporting vegetal life, and falls back under the almost universal dominion of Egoism, except during the intervals when the domestic affections are called into exercise. The full recognition of Altruism is confined exclusively to our own race; and even here it needs a long course of training, which yet in the most advanced populations is hardly concluded. The normal preponderance of Altruism is but faintly traced in some of the higher species. We see in them proofs of beautiful affection, but not extending from the individual to the race.

But Sociality the subject of a distinct science, because only developed by historic Continuity.

Thus the highest phase of vitality, that peculiar to the Great Being, is connected even more closely with the intermediate or animal phase than animal life is connected with the elementary vitality of Plants. This progression is necessary to complete the great dualism of Natural Philosophy, Life and the World, by establishing its connection with the only possible centre round which a real synthesis can be formed. But intimate as is the connection of the Social State with the mere Animal State, an entirely distinct science is required for its study. Taking the other abstract sciences, arranged in successive order, for its objective basis, this science, from the subjective point of view, stands alone as exercising a general control over their methods and doctrines. The co-operation in Space and Time of the organs which compose this vast and eternal Being demands special investigation, both statical and dynamical. Biology is not more adequate to deal with it than Cosmology, although both supply preliminary material. It is indeed from

Sociology that the biologist has to seek instruction in the theory of the highest animal functions. For each order of phenomena should be studied primarily in the objects which exhibit it in the highest intensity; from these we pass afterwards to the less marked instances. Now the higher attributes of Thought and Feeling, although existing in a more complete form in Man than in other races, are not sufficiently distinct even in Man until he has entered the Social State. The superiority of mankind to other races consists in the combination, and above all, in the continuity of efforts. But for this, their higher faculties would remain as unrecognisable as in the allied races, where they were once supposed to depend on automatic mechanism. Consequently, the same logical and scientific grounds which lead us to study the fundamental theory of Nutrition in the vegetable kingdom, indicate that the highest laws of the Life of Relation must be looked for in the Social State. Here we have the philosophic explanation of the fact that our conceptions of intellectual and moral phenomena are still so extremely imperfect, even after the endeavours of Gall and Cabanis to clear them from metaphysical abstractions and to connect them with the study of Biology. The real laws of these phenomena can only be discovered and demonstrated by Sociology; although Sociology itself could never have been founded without making use provisionally of the imperfect results of previous knowledge. Useful, from this point of view, as the study of animals may become, it will only be of secondary importance; as exercising a natural check on the conceptions originated by Sociology, and not otherwise to be reached. Its influence ultimately will thus be of a very similar kind to that which it exercised in opposition to theological and metaphysical hypotheses. Biology, in a word, cannot study this great subject to any purpose except in subordination to Sociology which alone is really competent.

Biology as an isolated science irrational.

And here we see more clearly than ever the impossibility of regarding the science of Life as an isolated study, since its highest phenomena form the subject of a distinct science. Nor would it be feasible to limit the field of pure Biology to the two lower phases of vitality, abstracting the highest phase. This course, though rightly adopted as a preliminary step while the student is passing through his objective course of study, would be most irrational if regarded as the ultimate arrangement of the Science. Animal life as a whole would be

unintelligible without the higher attributes which Sociology alone can estimate. Indispensable as the scale of lower beings may be in order to rise to a well-founded and systematic conception of the Great Being, it is only in this supreme type that we find the central principle of biological science, and this objectively as well as subjectively. Only in Humanity do we find the full development of all the functions, active or passive, external or internal, which in other races are merely seen in outline. Every animal species may be regarded, broadly, as a more or less abortive effort towards a collective Being. The species as a whole exists merely as an abstraction, or rather has but a nominal existence as a speculative artifice. The real existence is that of the individual, and sometimes of the family. Now in man the case is precisely the reverse. Thus our final judgment of animal organisms involves comparison with the supreme standard presented in Sociology. The only part of Biology which can be regarded, from the objective standpoint, as entirely independent of the science of Humanity, is the study of the elementary or vegetal phase of life; though even this, in the subjective arrangement to be finally adopted, will be connected with it. So far the study of vegetal life approximates to Cosmology; except that the necessity of adopting the human point of view as the only systematic basis for unity in our conceptions is even more clearly manifest. The encyclopædic rule applied in the beginning of the chapter is thus thoroughly borne out. We see that Biology is, of all the preliminary sciences, that which least admits of isolated treatment, from the very fact that it is the last step in the scale on which the construction of the universal science depends.

Still it controls and prepares the way for Sociology.

Although the consideration of the third mode of Vitality belongs essentially to Sociology, yet, in the study of the laws relating to it, pure Biology will always render a secondary, yet very valuable service. It will act as a check in testing the truth of these laws as they are discovered, and it will also prepare the student for their investigation. It is especially in the statical study of the internal functions of the brain that Sociological conceptions need this confirmation and preparatory examination from Biology. For in truth Humanity exhibits no moral or intellectual attribute which is not found, though in a slighter degree, in all the higher animals. Although it may be less apparent in them, yet it is more easily separable from

functions of analogous character, and above all, is more easily distinguished from the composite results due to the Social State. It is the only Criterion which can ensure that the rudimentary principles of Social Statics shall be thoroughly positive; because it enables us to detect the confusion and superfluity which otherwise are sure to impede our direct study of cerebral functions. The influence of Biology in this respect calls for more detailed investigation. I, therefore, conclude this chapter with a systematic survey of these higher organs and functions, subjectively considered; the positive theory of them being indeed indispensable to the succeeding volume.

Germs of sociological laws in animal races.

To facilitate the transition from Biology to Sociology it may be remarked that even the dynamic laws of Humanity are verified in the animal kingdom, though far less prominent. Since true Progress is invariably the development of the corresponding Order, the rudimentary identity which we recognise in the latter must extend also to the former. The traces of it no doubt will be extremely faint; since human progress depends almost entirely on the Social State. Still, when the laws of social dynamics have once been well established, we may expect to find their germ in the inferior animals. It is only on this supposition that these laws can be regarded as a prolongation of those regulating the great progression of animal life formed, not by the slight variations in the life of each organism, but by the successive arrangement of the different zoological types. This principle has been laid down and applied long since in my philosophical Treatise. I may explain here how it is directly verified in the case of the three great Sociological laws mentioned in the first part of this volume.

1. Law of three stages.

The verification is specially apparent in the first of these laws. It has been shown that the evolution of Intellect consists in the succession of three mental states; theological, metaphysical, and positive. The first stage of this evolution takes place in all the higher animals as in ourselves. But in none does it advance further than the theologic phase; a result more attributable to the want of the social state than to mere mental inferiority. Most races remain in a state of fetichism extremely similar to the condition of primitive man. As is the case in human fetichism, some germs of positive notions are mixed with it, enough to indicate in faint outline the simplest natural laws. These rudiments, however, are

always concrete, partial, and incoherent. In a word, the study of truth, so far as it is spontaneous, never goes beyond what is absolutely necessary for the practical conduct of the animal. Imagination is never so far developed as to replace the original Fetichism by anything like real Polytheism. Consequently the metaphysical spirit which arose to help forward this first transition can have no existence here. In the more intelligent races, however, who are brought into frequent contact with our own, independently of the training which we often give them, these relations must often be the means of transforming their fetichism. Constant observation of the great effects produced by human industry must lead them to regard the principal phenomena of nature as produced by Man, and not as due to the inherent vitality of the objects which exhibit them. Hence would come a new kind of polytheism, which no doubt would find acceptance with ourselves if we held the second rank in the animal kingdom instead of the first. But from the very fact that this belief is less chimerical than real polytheism, it will have less influence on mental progress. It will not stimulate imagination so much as the hypotheses to which Man is obliged to resort, owing to the impossibility of contact with any race superior to his own. At the same time, the polytheism to which certain animals attain is of a kind that may succeed their primitive fetichism without the intervention of the metaphysical spirit; which thus remains, even more distinctly than the theological spirit, a characteristic though transient attribute of the dominant race.

2. Hierarchy of scientific conceptions.

The second law of Sociology is supplementary to the first. It lays down the Order in which the various branches of abstract truth have arisen, and in which they should be classified; the order of decreasing generality and of increasing complication in the phenomena. But since the mental evolution of animals stops short at the first stage, no such order of succession can be manifested in them, except perhaps in the species who rise to Anthropolatry, though this point would be difficult to verify and has not yet been examined. Still we do find a certain confirmation of the law in the animal kingdom. The only abstract truths of which the animal mind has any notion are those of number, and these form the first term of our own encyclopædic series. A sound observer, Georges Leroy, has clearly shown that many animals count distinctly as far as three under

sufficient inducement. Now this is the limit of numeration in our own case, when deprived of the aid of signs. The language of many savages has no other word than *much* to denote indiscriminately all numbers beyond this limit. Human progress even in this department is essentially due to the Social State, from which there can be no doubt that the institution of artificial signs is derived. Therefore if the intelligence of an animal stops short at the first step of the encyclopædic series, the reason lies not so much in its intrinsic inferiority as in the want of the adequate social stimulus.

3. Law of evolution of activity.

The third and last law of Sociology is that of which we should expect the most distinct traces in the animal kingdom, since it relates to the practical activities of Man. These, as the law shows, are directed first to Conquest, then to Defence, finally to Industry. Each of these three modes is indeed clearly visible in animals, but in distinct species only. None exhibits them in natural sequence. As the activities of animals must always be dependent on their alimentary system, we shall find them generally of the military sort, aiming at conquest in the carnivorous tribes, at defence in the frugivorous; although under sexual impulses the latter may become as aggressive as the former. In some species, even though carnivorous, the constructive instinct may be so far developed as to exhibit true industrial activity, under circumstances sufficiently favourable not to stimulate the destructive instinct strongly. But illustrations of this are only to be looked for among the social races. If, as is probable, the successive transition through these three phases is limited to our own species, we must regard it even more evidently than in the preceding cases as a result of the Social State. Even in Man this progression is extremely slow.

Thus the intellectual and moral study of animals, as presented by Positive Philosophy, affords valuable confirmatory evidence of the three laws that regulate the highest mode of vitality. And although we could never have discovered these laws in instances where their working is so faintly manifested, yet in their outline they should form part of biological teaching, in order that sociological conceptions afterwards may be seen to rest upon the general laws of animate nature. And this dynamical aspect of the question will be fortified by a closer examination of the statical aspect. The combined result exhibits

the animal kingdom as the background of the great sociological picture, which needs this contrast to give distinctness to our elaboration or even to our conception of it.

Limitation of Social State to Human Race, pp. 508–516.

But apart from its general utility in this respect, Sociology presents a preliminary problem which the biological study of this third mode of vitality will assist in solving. In passing from the science of Life to the science of Society we require some adequate explanation of the fact that full development of the higher attributes has taken place only in our own race. It is the highest question of which pure Biology can treat, since it requires direct comparison of the various animal organisms. But it is one which should be more thoroughly penetrated with the sociological spirit than any other question in Natural Philosophy. Difficult as the problem is, yet its peculiar importance relatively to this Treatise induces me to offer a few remarks tending to its elucidation.

To reach a satisfactory conclusion we must divide the problem into two parts; the first and principal of which is essentially sociological; only the second, or accessory part, belongs to Biology. We have first to show generally why full development of the Social State must necessarily be restricted to some one species, no matter which that one may be. This once granted, it will not be difficult to explain why the human race has been the one selected.

Each of the social races tends spontaneously towards the formation of a collective Being; but it is impossible for more than one really to attain to it. There can be only one Sociocracy; and the reason is evident when we remember that the two distinctive attributes of the collective organism are Universality and Continuity. The Great Beings then that otherwise would be possible, are obviously incompatible with each other. The strongest of them must soon reduce the others to subjection, or destroy those that will not submit to discipline. And the struggle is the more inevitable that, as I shall proceed to show, the victorious race must necessarily be carnivorous. It is forced therefore to reduce to subjection the herbivorous animals on whom it feeds, and to secure itself against the rivalry of other carnivorous races. It would be impossible to conceive of several collective Beings, except on the supposition of something like equality of force in the principal social races, both in organisation, and also in adaptation to their environ-

Struggle of races for superiority resulting in victory of one.

ment. This, though an improbable, is not strictly an inconceivable hypothesis, and possibly there may be other planets where it is realised. But even this supposition would seem only to affect the time necessary to bring about the exclusive preponderance of one or other species, unless indeed we suppose that the equilibrium, difficult to imagine at any time, could be preserved undisturbed through an indefinite period. Yet even this accumulation of improbable hypotheses would not affect the truth of the fundamental principle here laid down. It would not really prove that several collective organisms could coexist. For the supposition that they were nearly equivalent in force implies that they would resist each other's expansion. Consequently the characteristic features of Universality and Continuity, instead of being found in several, would be found to a sufficient extent in none.

This inevitable failure of all the social races except one to form collective organisms is extremely analogous to what has taken place in the struggles of human tribes with each other. Each nation has had a tendency to become the central nucleus of Humanity; but one only was destined actually to become so to the exclusion of the rest, these being grouped subsequently around it as circumstances determined. Thus even in the case of the several germs of the same Great Being the law operates: *a fortiori* shall we expect to find it operating as between different species. The preponderance of Man, which in obedience to this fatality had originally to encounter collective opposition, has long since been established, and at present meets only with isolated cases of resistance; from which we argue perhaps too hastily that the races which oppose us are wholly incapable of combined action. But when archæologists understand better how to examine the periods which have left no direct records, they will in all probability find traces of long and formidable struggles against species which then were powerful, but which now are either destroyed or subdued. Confused and fabulous traditions of such struggles still remain. Students of Sociology who travel in countries where the larger apes may have formed communities might throw light on this difficult question, which affects the final religion in so far as it corroborates one of its fundamental doctrines, the necessary Unity of the true Supreme Being.

In Biocracy then, as in Sociocracy, the reasons for the ex-

clusive preponderance of a single race are similar. Only these reasons are of far greater force in the first case than in the second, the inequalities being far more strongly marked. Consequently Biocracy became established spontaneously by the preponderance of Man long before Sociocracy could be fully constituted among human populations. This, however, does not affect the connection previously mentioned between these two great phenomena. For biocratic unity cannot be developed to its full degree of perfection until sociocratic unity has been securely established.

Reasons why the victory was gained by the human species.

Thus much for the sociological aspect of this question. The easier task remains of explaining the biological reasons why it should be the human race to which the privilege of fully developed sociality has fallen.

Man capable of carnivorous food, though not restricted to it.

There is a preliminary consideration which will much simplify the discussion. The struggle for biocratic empire must be limited to carnivorous races. The reasons for this lie in the influence previously explained, of this mode of alimentation on the general development of every animal attribute, not excepting the noblest. So strong is the stimulus given by it to the active and contemplative faculties, so vigorous the blood sent through the internal organs, that statical inferiority must be great to neutralise, as is the case with some species, these dynamic advantages. The cerebral superiority of the dominant race must surpass anything that we can conceive for its dominion to be compatible with vegetable regimen. It is true that the moral life, from which the very principle of Sociocracy is derived, is unfavourably stimulated by carnivorous food. Not that the destructive instinct is actually created by this mode of nutrition, since every animal possesses it more or less; but it certainly is largely developed by it. And accordingly in many high-toned utopias of antiquity vegetable diet was recommended with the view of strengthening the sympathies on which the social state depends. But the invariable failure of these schemes proves the unfortunate fatality that carnivorous regimen is one of the essential conditions of our preponderance. It is a necessity demanding constant moral discipline, individual and collective, to prevent the social instinct from being too much injured by it. And the possibility of conciliating these two opposite conditions is frequently illustrated in animals. The case of the dog especially may be cited; an animal more exclusively carnivorous than man, and

yet marvellously endowed with unselfish affection. The combination is less difficult to conceive now that Gall has removed the metaphysical errors as to the indivisibility of our moral nature. So that, returning to the question, the co-existence of these opposed conditions facilitates the solution of our problem. It restricts within still narrower limits the choice of species capable of attaining the supremacy.

It is important however to avoid the exaggerated impression that this condition creates the faculties and propensities which in reality it merely stimulates. But against this I have already guarded. As I have shown, the mode of alimentation depends as much on external circumstances as on organisation: it may vary with the former without alteration in the latter. In this respect the human race is far more modifiable than the purely carnivorous races; since we find in it many instances of whole tribes subsisting on a purely vegetable diet. So that the condition of which we have been speaking merely implies that the choice for Biocracy must be limited to races capable of living carnivorously. In fact animals restricted too exclusively to carnivorous food might find it a hindrance rather than an aid to their collective development. It would increase the difficulty of adapting themselves to different localities, and thus prove a barrier to the extension of their society, especially at the outset. Under this first aspect then our own race is better endowed than any other. It is capable of greater variation in diet, compatibly with retaining the attributes inherent in the carnivorous tendency.

Cerebral functions. 1. Man superior on the whole in social instincts.

But great as may be the indirect influence of conditions affecting the vegetal functions, the more direct grounds for this exclusive privilege of collective development must be looked for in the functions of animal life. The highest results of animality are of course those due to the combined action of its nobler organs. We must look then in the first instance to the functions of the brain: not however isolating them from the external functions, nervous or muscular, on which their social efficacy depends.

The view here given of this important subject must be very imperfect. I may point out briefly, however, the way in which the three classes of cerebral functions contribute to the result; thus bringing Biology and Sociology into their closest relation.

The principal condition of real capacity for social develop-

ment is evidently connected with the affections. Social instincts must exist in sufficient strength. What the actual laws of this fundamental attribute may be we do not know as yet, though Gall has pointed out its direct relation with the organisation of the brain. Nearly all zoological orders above the Mollusca contain sociable species. But they are so interspersed among others that are unsocial that it has hitherto been impossible to connect the distinction with any other. The subject, however, has not been studied much or wisely. Unguided by any philosophical principles, observers have frequently taken the absence of any actual community as a proof of inherent incapacity for society; like those travellers who, seeing tribes without religious worship, inferred the absence of a creed. But the law which I have just established, restricting full social development to a single species, will no doubt modify most of these preliminary views. The truth will, I imagine, be found to be that the capacity for society belongs, though in very unequal degrees, to all species where there is entire separation of the sexes. The failure of almost all to arrive at a state of community may be explained satisfactorily by the difficulties of external circumstances, and above all by the preponderance of Man.

However this may be decided, we are not left in much uncertainty as to the moral superiority of the human race. There are many animals, some kinds of dogs especially, in whom the strength of personal attachment is perhaps greater than in ourselves. But no race has the same capacity as ours for collective sympathy; and this it is on which the social capacity more directly depends. Almost the same may be said of the intermediate feeling, Veneration strictly so called. Vico was right in his remark that the worship of the dead was exclusively confined to humanity. Nowhere else do we find the burial of those who have been loved, although we do find affectionate and long-continued remembrance of them. All these high attributes have been erroneously referred to Intelligence, by metaphysical schools whose only point of agreement is to exaggerate its influence. Intellect is no doubt more closely connected with the social instincts than with the personal; but here, as elsewhere, it merely directs their spontaneous action to some special purpose. Desire is in every case the result of a direct innate impulse wholly independent of reflection.

Prolonged infancy.

With this fundamental condition are coupled several ac-

cessory influences which naturalists previous to Gall erroneously regarded as the principal source of social development. The most important of these is the long duration of childhood in our race, which, involving the continuance of parental tenderness and of filial dependence, must help to consolidate domestic union and consequently to lay the foundation of the social state.

2. Intellectual superiority of human species exaggerated, but real.

Passing from moral to intellectual faculties, the superiority of Man is so evident that we need not dwell upon it unless to moderate the view commonly entertained of its social importance. Not indeed that he could have dispensed with these endowments. Social capacities have been rendered abortive in many species simply by defect of mental power. Intellect is required not solely for the purpose of directing the collective activities, but also for the aid it affords to the social sympathies by pointing out the aim at which they should be directed. Although not indispensable to the development of simple family affections, social affections properly so called cannot be fully formed without it. Any collective sympathy even in the smallest tribe would be vague and inadequate, unless reflection rendered the corporate existence as definite as the individual. This is the highest service which Intellect can render, although even here it does not hold the first place. Intellectual pre-eminence is doubtless the least contested of human advantages. The mental inferiority of animals has however been much exaggerated, for want of distinguishing sufficiently between individual capacities and social results. The institution of language, for instance, which has exercised such influence on intellectual development, should be referred both in its natural and artificial stages to social life, as is indicated by the development of both simultaneously. Consequently the intellectual feebleness of many races may have less to do with cerebral imperfection than with the failure of collective development. The superiority of the lowest human tribes to the highest animals is not so great as to prevent our attributing the difference in great part to the Social State; especially as the organs and functions in question are peculiarly improvable by hereditary exercise. A careful comparison again of species closely allied in organisation, but differing in sociability, will show that mental inferiority may be more than compensated by greater social capacity. Intrinsically the cat is more intelligent than the dog; but when both are brought into familiar intercourse

with Man, the mental powers of the latter are developed to a higher degree than those of the former.

Vocal organs of Man.

Here, too, as before, we may note certain accessory conditions which render our intellectual supremacy still more complete. Specially we should remark the influence of the highest part of the muscular apparatus, that which regulates our modes of expression, and especially the voice. Our superiority to other Mammalia in this respect has much enhanced the advantages of our cerebral organisation. The internal organ which regulates the formation of voluntary signs would be powerless unless there were adequate external instruments of expression. Now, in spite of theological and metaphysical optimists, the adaptation of the outer faculty to the inner is often extremely imperfect. And this has frequently led observers to imagine radical incapacity for artificial language, when in reality there was only vocal imperfection. The great Cervantes, in his ingenious 'Coloquio de los perros,' points out very clearly the pitiable condition of an animal with emotions and thoughts which it can only express imperfectly.

3. Practical qualities better combined in Man than elsewhere.

To complete this explanation of human supremacy, we may now pass to the cerebral functions relating to active life. The social sympathies which enable us to unite, and the intelligence which directs those sympathies, would not enable us to hold our ground, especially against the more powerful carnivora, unless we were superior in this respect also. And here, even more than in the other respects, adaptation of physical with cerebral organisation will be necessary. Speaking first of cerebral endowment, we have the three practical qualities of Courage, Caution, and Perseverance in a higher degree than any other race. Some perhaps may surpass us in one or other of these qualities, but none approaches us in the combination of them; and for continuous supremacy, especially when a corporate body is concerned, all are necessary. The last quality, which ultimately is the most efficacious of all, seems to be possessed by Man in the highest degree, irrespective of any mental or moral influence. Yet this combination of moral qualities would not ensure practical ascendancy, and consequently would not be easy to recognise, unless it were seconded by a suitable physical organisation. With all the qualities essential to sustained activity, whether of the destructive or constructive sort, there must be coupled, if they are to

be of any use, proper muscular and sensory conditions. In the smaller carnivora it is possible that these may not always co-exist. There may be species which for want of such adaptation are condemned to lead a life far below the range of their higher qualities, and which have not even the mitigation of losing these qualities by disuse, but must waste them in miserable struggles for daily subsistence.

Muscular and sensorial characters.

Of the larger carnivora Man stands out here, too, as the most richly endowed. Inferior to many other species in sight and even in hearing, he has two points of physical superiority connected with each other in which he stands alone; his erect posture and the structure of his hand. The practical importance of these features was appreciated by the earliest physiologists, and especially by Galen. They are favourable to intellectual development also, since they facilitate observation; but it is on the active faculties that this influence is most operative. And the necessity for such instruments of action becomes the more apparent when we consider that the artifices of society have no real substitute for them. In almost all our industrial operations for instance, the use of the hand is implied, even in those few cases where it seems to be dispensed with. How important these physical advantages are socially, may be conceived by imagining a tribe which did not possess them, though endowed with every other human attribute. The higher qualities would become almost useless, and the race would be soon destroyed by Carnivora more strongly armed. It was no doubt desirable to correct the materialist errors of the last century, and to show that these physical qualities were not the principal, much less the sole, reasons for human preponderance. But Gall, while proving so luminously and conclusively the superior importance to be attached to cerebral organisation, was too apt to overlook the physical mechanism which alone can turn these cerebral qualities to practical account.

Nudity.

In addition to these moral and physical conditions there are certain organic peculiarities in Man calculated to stimulate his practical faculties to stronger exercise. The nudity peculiar to Man may be specially mentioned. Its influence has indeed been absurdly exaggerated. Yet there can be no doubt of the effect which it exercises on social development in connection with the arts necessary for self-defence. But here more

clearly than in any other case we see what it is that gives value to these secondary conditions, too often supposed essential. Nudity of itself would be a serious obstacle to collective development in a species whose cerebral organisation was not sufficiently high, nor sufficiently assisted by other organs, to contrive a remedy for it. The principal effect of this peculiarity in Man has been of a moral kind. It is the origin of the institution of clothing, which has done so much to purify human nature. But this subject, which has been discussed hitherto in a spirit of blind materialism, belongs properly to the next volume, where it will be carefully examined.

These then, briefly, are the natural endowments which have secured for the human race the monopoly of social development; which have given him, therefore, the fundamental privilege of forming a true Great Being, to the exclusion of all other animals who like himself have been tending to this final summit. We have seen how vain it is to explain this phenomenon by the consideration of any one special condition. It depends on the combination of almost every function, from the highest to the lowest, not even excepting those of vegetal life. The extent to which these conditions operated in the beginning must not be measured by their operation in the present day; because it is largely augmented by the very social state which they made possible. It follows from the law with which we started of the limitation of social development to a single species, that each of these points of superiority may have been originally very slightly marked, quite consistently with ultimate supremacy, which would merely be a question of time. All these attributes being in a high degree capable of extension through exercise and heredity, they would constantly be on the increase, and thus would always be consolidating the dominion which they had established. And inversely, their compulsory disuse in rival species must have continually diminished their primitive intensity, so that there is a double motive for our tendency to exaggerate their intrinsic inferiority. Now Organs are far less modifiable, either for increase or decrease, than Functions. We have, therefore, here a general explanation of the palpable disproportion between the immense dynamic superiority of our race and our slight superiority statically.

The preceding remarks show how largely Biology participates

in the initial study of the third mode of vitality. For although this transcendental field belongs essentially to the province of Sociology, yet the Science of Life traces out all its elementary aspects, including even the subject of Moral Statics, which, as I have said, will form the conclusion of the present chapter.

Review of results obtained. Successive Scale of Being.

Here then we terminate our survey of the three great modes or phases of Vitality; that is to say, the Vegetal, the Animal, and the Social mode. Together they form at once the object and the subject of a general Treatise on Life, according as we take the concrete or the abstract point of view. Their succession enables us to form a continuous series of organisms and organic phenomena, in conformity with the great encyclopædic principle of classification by decreasing generality and increasing complexity. To complete the biological scale, we have now only to intercalate a sufficient number of terms between these fixed points. From the general point of view here taken, we may regard the organic scale as the prolongation of the series previously adopted in Cosmology. The mathematical, physical, and chemical aspects of inorganic nature are thus naturally succeeded by the vegetal, animal, and social aspects of organic nature. The chain formed by these six essential modes of existence, forms, whether regarded from the abstract or from the concrete, the great hierarchy of conceptions which is the Positive substitute for the older attempts to co-ordinate the whole range of phenomena. The contrast between Life and Death is such that no closer link between them is possible.

Scheme of Treatise on Abstract Biology, pp. 517–540.

Scientific Principles, pp. 517–525.

The larger and more difficult portion of this attempt to systematise biological truth is now concluded. I have explained the preliminary principles required for an Abstract Treatise upon Life. It will be now easy to complete the subject by pointing out, first, the spirit in which this great scientific work should be designed, and secondly, the general plan to be followed. The execution of it must be left to others.

Twofold adjustment: (*a*) of organism and environment: (*b*) of organ and function.

All biological conceptions must of necessity depend upon two kinds of adjustment; that of the Organism to its Environment, and that of Organs to Functions, or rather of Agents to Acts. Of these two invariable relations the first is general, since it involves the life as a whole; the second is special, involving separate and distinct modes of vital action. This last point of view, being analytic, should therefore be subor-

dinated to the first, which alone represents adequately the synthetic character of vital science. No conception in systematic biology can be considered as thoroughly complete until it exhibits these two elementary relations coherently combined. Until this degree of fusion has been reached, all investigation can only be regarded as preliminary.

On the new principles of biological reasoning, we shall therefore no longer define a living creature by the enumeration of its organs, as if these could have independent existence. That so irrational a practice should ever have become current is simply due to the servile manner in which biologists have adopted methods of reasoning suitable only to their preliminary studies of Cosmology. In the inorganic part of natural philosophy we have necessarily to begin by studying the parts; and indeed, objectively, complete appreciation of the whole must always be impossible. But with Biology, when properly pursued, the case is precisely the reverse. The object of study must be apprehended as a whole before any just notion can be formed of its parts. The synthetic tendency of Positive Religion will lead naturally to this result. In Sociology, where the partial connections, though more extensive, are less intimate, it would now be considered a serious heresy, equally repugnant to good sense and to morality, to define Humanity by Man, instead of referring Man to Humanity. Still more absurd then is it to persist in defining the whole by its parts in a case where the parts are in the strictest sense indivisible. All this will be set right when the systematic study of vital phenomena is carried on under the subjective influence of Sociology. The objective encroachments of Cosmology will be prevented; and through the encyclopædic mode of study, subordinating analysis to synthesis, our conceptions of a living Being and of an Organ will be remodelled. The Whole alone is real and can be directly apprehended; and not until it is apprehended can we form any true notion of the instruments with which its special operations are conducted. In a word, the synthetic conditions so clearly grasped by the ancient thinkers, will be harmonised with the preparatory labours of modern analysis. At the most critical period of biological philosophy, Bichat's incomparable genius presented a spontaneous type of this normal habit of mind. And the general adoption of the word Organism, taking place about the same time, showed the

new tendency of biological speculation to become at last synthetic.

Subordination of the second adjustment to the first.

In the normal state of Biology we shall, indeed, examine carefully, as before, the special relations of functions with organs. But these partial relations will no longer be isolated. Their study will be begun and carried on with a distinctly synthetic purpose; that of forming a clearer conception of the general relation between the Organism and its Environment; for this, and this only, is the ultimate goal at which the Science of Life aims. And not merely does this conception of the Whole mark the limit for investigations of detail, and supply the measure of their value. It should guide the course which they are to take; it should be their point of departure and their final aim. Otherwise they will remain empirical, or degenerate into useless digression. This follows evidently from the principles here laid down as to the subject and object of systematic Biology. While reserving the third mode of vitality, in its complete form, for the science of Sociology, Biology, as I have shown, claims the two first modes. These, when taken together, present an exact view of the relation existing, whether under the vegetal or animal aspect, between Organism and Environment. Each of these two modes is subject to three general laws, by which all special researches must henceforth be dominated. This is the only procedure adapted to the synthetic character of Biology. Yet the reverse plan, suited only to the preparatory state of the science, still continues to be followed. This consists as before, in empirical and blind accumulations of details; the conception of the Whole being still too confused to be kept constantly in view; and, as a substitute, we have retrograde metaphysical ideas which obstruct thought instead of guiding it. Still through these preliminary researches we have at last attained such a general conception of the organism, statically and dynamically, as may serve to guide future enquiries. Now then is the time for bringing the science into its normal state. As studied by encyclopædic thinkers, details will only be examined for the purpose of giving fixity and clearness to the conception of the Whole; this alone being in the true sense Positive; that is to say, at once real and useful. When the growth of a science proceeds in uniformity with its true nature, its most essential theories necessarily offer themselves the first; and

all subsequent speculation tends simply to consolidate or to develop them. And Biology will be an illustration of this truth as soon as Sociological influence has rendered it synthetic. The six general laws of vegetality and animality which I have here laid down form the essential subject-matter of the Abstract Theory of Life. All special researches that have no tendency to render them more distinct or more coherent should be set aside as useless, and even as irrational. The discipline here recommended follows as a natural consequence as soon as Sociology assumes its philosophical position, and is recognised as the only systematic basis of true Religion. The method followed in Social Science has been to proceed from primary to secondary laws, the sole purpose of the latter being to develop the former. Taking this for a type, students of the succeeding science will follow the same plan, feeling it to be the only means of arresting the current of reactionary anarchy. When once adopted in Biology, the method will be extended without difficulty to Cosmology; for this department of science also must ultimately become synthetic, although remaining for a longer time than the rest in the preparatory stage of analysis.

Function the result of action between Organism and Environment. Extension of this truth to Cosmology.

In this more systematic conception of Biology, Function will be regarded as the special result of a determinate relation between Environment and Organism. These two elements and the product of their action form in fact the three essential aspects of every biological truth. Our principal attention must be devoted to the Organ, as the necessary link between the inert Environment and the vital Function; since without this intermediate agent there could be no dependence of the one on the other. It is quite true that Biology is not the only science in which this interdependence is found. It is seen elsewhere, though in a far less complete form. All existence is relative; and therefore, even in Cosmology our conception of phenomena must be dependent upon the environment in which they take place. But the dependence is far less definite than in the case of organic phenomena. Every inorganic body could exist, though under altered forms, in most kinds of environment, whether in those actually known to us, or in others that might be conceived. But the living body requires an environment specially appropriated to it, which cannot vary beyond certain limits in any direction without rendering life impossible. Again, since every phenomenon must have some seat, every

conception of Activity, organic or inorganic, must be connected with some kind of Substance. Still, the correspondence between statical structure and dynamic manifestation is far more apparent in Biology than in Cosmology. As inorganic action belongs to every form of Matter, with mere differences of degree, its various modes are less readily associated with the thought of the seat appropriated to it. The association becomes, it is true, more distinct and specific in that highly complicated form of activity called chemical, which approaches most nearly to vital action. But vital phenomena being still more complicated than chemical, the correspondence between structure and function becomes precise and coherent to a degree far exceeding what is seen elsewhere. And this is why, owing to the vagueness with which all general principles have hitherto been stated, the relation between the static and the dynamic state has been regarded as peculiar to Biology, though from its very nature it belongs to the whole range of Science. The truth then is simply that, the twofold connection of Being with Environment, and of Act with Agent, is far more apparent and distinct in Biology than in Cosmology. Carrying the same reasoning still further, we shall find that in Sociology the correspondence is developed to a still higher degree. More complicated and more special than any other, the Great Being exhibits with greater fulness the twofold dependence of Organisation upon Situation, and of Progress upon Order.

Henceforth, therefore, now that each special correlation of Organ and Function may be regarded as a mode of perfecting the general correspondence between Organism and Environment, the scientific character of Biology becomes completely coherent. All its researches will tend, directly or indirectly, to establish more exact accordance between the statical state and the dynamical state, by determining the functions of all organs and the organs of all functions. And the solution of this double problem will give rise to no useless or incoherent speculations, because its true object, the amelioration of the general conditions of vegetal and animal life, will ever be kept in view.

We may now therefore put the problem of Biology into a form in which the action of the environment is left unexpressed, as being too fundamental and universal to need explicit mention. And there is the more reason for this, that, practically, in all the questions which arise, a knowledge of the environ-

ment is supposed to have been acquired in the course of inorganic study which precedes and prepares the way for Biology. The question then in Biology always is; Given the Agent, to find the Act, and inversely. No doubt there is, logically speaking, a third general problem relating to the environment itself. Given a certain organisation, and given the life belonging to it, we may enquire what would be the external influences from which, acting on and acted upon by the organisation, that life would be the result. But in the first place, our knowledge of biological laws will never become sufficiently precise to allow of this inversion of the problem. And besides this, it is certain that such questions, even if accessible, would be extremely useless except as didactic exercises intended to give definiteness to the conception of the environment. The change produced in the environment by every vital process should of course form a part of every biological enquiry. But this is naturally included in the study of the Function or Act, since it is an essential element of the organic result. It is, indeed, only from this point of view that such changes can be regarded as important. Viewed with reference to the environment itself, they might in most cases be ignored, being seldom important even in cases of collective action. The influence even of the greatest of organisms upon the outer world is but slight, and affects little beyond the condition of its own existence. At a very little distance above the Earth's surface the material results of human action would be imperceptible. But from the biological point of view, every modification produced by the organism in the environment should be taken into account, both as an evidence of the vital act, and as a source from which additional reactions upon the organism will proceed.

Separate study of anatomy and physiology necessary as preparation.

In the systematic arrangement of biological truth here presented, it might seem that certain subjects are excluded which, incomplete as they may be, are yet of deep and immediate interest. There seems to be no place left for studies of either a purely statical or a purely dynamical kind, though hitherto these have formed the larger portion of the science. But it is easy to see that in this ultimate constitution of Biology the paramount importance given to the relation of the Act to the Agent does full justice both to Anatomy and to Physiology. Only these studies will for the future be regarded as merely

preparatory; ultimately we study the Organ for the sake of the Function, and the Function for the sake of the Organ.

So far from studies of a purely statical kind being excluded by this method, it adds both to their scientific utility and to their logical value. What are excluded are empirical observations and idle or incoherent speculations; and the maintenance of a constant check upon these will do as much to extend the scope of true biological investigation as to ensure its coherence. Proper study of the anatomical relations of organs, and even of their special structure, will do much to perfect the knowledge of their functions, both by suggesting analogies and by furnishing direct indications. And physiological enquiry when wisely conducted will in turn do as much in revealing the nature of organic structure, although in the present day this is less readily admitted. But in either case the result must be regarded as purely provisional until both aspects of the truth have been satisfactorily adjusted. Perfect correspondence between the statical and the dynamical point of view must be obtained before any biological conception can be said to have reached its maturity.

Necessity of statical conception to fix dynamical thought.

It might perhaps be thought that the determination of organs was not necessary except for special purposes of practical utility. But in Positive education the importance of it will be always insisted upon, even in the case of functions for a knowledge of which the anatomical basis appears the least necessary. Such a basis is the only guarantee for the precision and fixity of the most elementary dynamical principles. This is extremely evident in the study of diseases. Both in the diagnosis and in the treatment of disease the mind should always be directed to the organ; it should never be concentrated exclusively on the function. Even before any accurate determination of the organ is possible, hypotheses of the boldest kind have often rendered great service in this respect, provided that, like the hypothesis of Broussais, they have been so constructed as to direct pathological reflection into the right channel. And although this course has not been adopted to the same extent in Physiology as in Pathology, the logical need for it is the same. Dynamical studies, however skilfully conducted, will never yield anything but vague results until they reach some statical conclusion, whether that conclusion be verified or hypothetical. And the more complicated the phenomena with

which we are dealing, the more necessary is it to refer them to some distinct seat of action. We have found this to be the case in the second division of Cosmology; and in Biology, especially where the higher functions are concerned, the necessity becomes irresistible. Man's intellectual and moral nature had been studied without any result except indefinite scepticism, until the genius of Gall succeeded in establishing certain fundamental notions by the help of an extremely venturesome hypothesis as to the functions of the cerebral apparatus. Thus even if the consideration of organs were not indispensable for practical and also for educational purposes, its value as a guide in pure speculation would still remain. So strong is the necessity for it that in those cases where we are not in a position to frame hypotheses capable of being speedily verified, it becomes desirable to adopt the still more provisional course of employing indeterminate centres of action. Unsatisfactory as this course may be, it at all events saves our physiological reasoning from vagueness.

Progress made by Bichat in correlating anatomy with physiology.

The greatest of biologists, Bichat, has led the way towards the systematic adjustment of statical and dynamical aspects here proposed, in his admirable work on General, or, as it should be called, Abstract Anatomy, the profound significance of which none but encyclopædic thinkers can comprehend. Never before was synthetic reasoning so successfully supported by analytic skill. By decomposing a large number of organs into a few uniform tissues, each endowed with definite attributes resulting from their structure, the adjustment between Act and Agent was carried down to the ultimate elements of the organism. Moreover the vital consensus became far easier to grasp when the anatomical conditions common to all organs and all organisms were kept constantly in view. And lastly, the general harmony of organism and environment became fully appreciable, since each of its principal modes was now assigned to a distinct tissue. Under the principal successors of Bichat this central idea was enlarged and defined, and was also rendered more coherent. As now presented, it harmonises perfectly with Bichat's other great conception of the correlation of animal with vegetal life. Corresponding to the universal or vegetal life, we have the cellular tissue, the simple basis of all organic structure. On this underlying framework are superposed two special elements which form the tissues corresponding to the

two attributes characteristic of animality. The missing link in this theory, indicated in my former work, is now virtually filled up, especially since the histological investigations of Schwann. No part of Biology, regarded as a special study, has been so successfully elaborated, or is so consistent with the encyclopædic culture of the science.

Logical principles, pp. 525–532.

Having thus indicated the scientific spirit in which Biology should be studied, I have to speak of the logical spirit, or in other words, of the methods, appropriate to this science.

Necessity of mathematical training.

So far as deductive logic is concerned, encyclopædic training will have familiarised all true biologists with its principal artifices, which should be studied at their fountain-head in mathematics. On a condition so obviously necessary I need not now dwell further. The abstraction and the generality of the higher vital theories is such that they can be studied to very little purpose except by thinkers whose reasoning powers have undergone a vigorous training in simpler subjects. This logical ground would of itself be sufficient to warrant our insisting on the study of mathematics, even supposing them not to be requisite scientifically. The weakness of our present biologists in this respect has much to do with their confused and reactionary condition. When minds of inadequate power or insufficient training undertake problems of such transcendant difficulty, it is no wonder that mathematicians are inclined to regard them as mere empiricists. Up to the present century mathematical training had always been practised as a preliminary condition of biological study; Buffon and Lamarck being the last to fulfil this condition satisfactorily. The leading minds who succeeded them in the work of founding biological science were induced to ignore or neglect this logical requirement in their zeal to defend the science against the encroachments of Cosmology. But there is not even this excuse for those who followed them. They ought to have seen that the only real means of securing the proper independence of their subject was to fulfil the preparatory conditions which its position in the encyclopædic scale demanded. Biology will always remain liable to the encroachments of cosmologists until the men who cultivate it show themselves masters of the results and methods of inorganic science. Nor is the degraded state of mathematical teaching in the present day a sufficient reason

for the neglect of training so habitual to the older biologists. It is quite true that since the invasion of the algebraists mathematical training has lost much of its value as a deductive exercise. The reasoning process being carried on exclusively through the agency of special signs, nothing is done to strengthen the general power of deducing independently of this language, which is only suited to the lower ranges of speculation. But this mechanical procedure might be at once modified, or indeed avoided, by students who regarded mathematical studies merely as a step in the encyclopædic scale qualifying them for more important departments of natural philosophy. There is no dispensation therefore from this training for biologists who would surmount the arduous difficulties of their subject.

Inductive logic.

They should also have become acquainted in other departments of Cosmology with the elementary procedures of Inductive Logic; that is to say, with direct Observation and with Experiment. The second of these methods however, as I have explained in the preceding chapter, is fully applicable only to inorganic researches, especially to the science of Physics. Biological phenomena are almost always too complicated to allow of such experiments as are really decisive. And the too frequent employment of this procedure, which holds out to second-rate minds prospects of transient but easy fame, has much to do with the present degradation of vital science. Not however that biologists should altogether abandon this mode of investigation. Wisely applied it may in certain cases assist, although it can never supersede, the work of meditation.

Pathological method.

But the scope of the inductive method is materially increased in this science by the introduction of a new kind of experimentation, all the more effectual that it takes place spontaneously. For careful observation of disease is in truth a series of indirect experiments carried on in living bodies, and far better calculated than most experiments of a direct kind to throw light on dynamical and even on statical questions. In my Positive Philosophy I have dwelt fully on the character and the scope of this mode of enquiry. To it the most important part of our biological knowledge is in reality due. The great principle upon which it rests is one which I think it right to attribute to Broussais, because it underlies all his writings, although no one before myself had generalised it into a distinct

formula. Up to that time the pathological state had been accounted for by laws totally different from those of the normal state, so that observation of one could decide nothing for the other. Broussais proved the principle that the phenomena of Disease are essentially homogeneous with those of Health, the only difference being one of comparative intensity. This luminous conception has now become the systematic basis of Pathology, which thus takes its place as a subordinate branch of Biology. Applied inversely it justifies and multiplies the claims of pathological analysis as an agency of primary importance in biological research. A wider and more thorough application of this powerful instrument will enable us to dispense almost entirely with experiments of the ordinary kind. For instance, the important distinction between sensitive and motor nerves ought to have been discovered by observation of disease long before it was verified anatomically by cruel torture of animals.

In the use of this method we require more than anywhere else sound theoretical guidance based on adequate knowledge of the normal state, without which the pathological state is unintelligible. Therefore the results already obtained from it give but a very faint idea of what it will lead us to ultimately. Under the encyclopædic system it will be largely used in the study of intellectual and moral functions, to which Broussais' principle has never yet been properly applied; so that their morbid states at present merely arouse wonder or alarm without contributing to our knowledge. And there is the more reason for counting upon this systematic aid from pathological analysis that medicine will undoubtedly be soon recognised as one of the accessory functions of the sociological priesthood, as it was of theological priesthoods formerly; so that there is every likelihood of this valuable instrument of investigation being used to the best advantage. And independently of its direct biological value, it will form, when embodied in the general system of positive education, an excellent logical training for analogous procedure in social science. The collective organism, by virtue of its higher complication, is liable to disturbances even more serious, more varied, and more frequent than the individual organism. There can be no doubt that the principle of Broussais is applicable here also; and in fact I have myself frequently made use of it in verifying or in developing sociological

laws. But those who would apply the analysis of Revolutions to the Positive study of Society must pass through the logical training given by the simpler phenomena of Biology.

Method of comparisons.

But this indirect method of experiment, important though it be, is not the only contribution of Biology to the art of Induction. An improvement of even greater consequence is the full prominence now given to Comparative Logic, and to the Theory of Classifications resulting from it. We have here a third and totally independent mode of Induction, as distinct from the method of Experiment as this is from the method of simple Observation. It is the most efficacious of all the preparatory modes of inductive logic; nothing being now wanting but the transcendental mode developed by the final science, the Historical Method, which alone can combine and control all the rest.

This admirable branch of Logic, gradually formed from the time of Aristotle to that of Bichat, is the most remarkable result hitherto attained by biological research. A direct and special examination of it will not be expected in the present work, the less so that the subject has been treated in the third volume of my philosophical Treatise, to which the student is referred. I subjoin a few general remarks upon the special features of the two divisions of which this method consists, and on their material relations.

Present mode of regarding it too limited.

Comparative Logic could not have arisen elsewhere than in the study of Life. Here only do we find that continuous series of analogous yet distinct objects which is the first condition of the art. Consequently no important feature of it is due to Cosmology. But in Biology we find it used spontaneously in the earliest traces of the science, whether statical or dynamical. It is erroneously supposed to be recent because we are too apt to overlook the direct phase of the method, and concentrate our attention too exclusively on the indirect phase, which is simply a higher degree of the same process.

The truth, however, is that biological comparison may be of three kinds. We may compare the different parts of the same organism, we may compare the different stages of its growth, or finally we may compare together different organisms. So far from the comparative method implying only the last of these, its most important results have in reality been hitherto obtained from the two first. Bichat, hardly less than Aristotle,

took the first and more primitive mode, as being more direct than the others, for the groundwork of his principal statical and even dynamical conceptions. It was in this way, for instance, that he established his admirable analogy between the external and the internal envelope of animal organisms; a discovery from which so much light has been thrown on the Positive theory of Animality.

Biological classification.

But highly as these two spontaneous modes will always be estimated by philosophic minds, it must be admitted that the full efficacy of the Comparative Method can only be seen in its application to the entire range of organic nature. Here it becomes a component part of the general Theory of Classification, which in fact owes its real origin to biological science. This highest branch of introductory logic consists essentially in the proper adjustment of two consecutive processes, the formation of natural groups, and their arrangement in hierarchical order; both processes being guided by the same governing principle, so as to ensure the unity of the system. The principal artifice employed is the subordination of characteristics, to which may be added ultimately the substitution, within certain limits, of external for internal distinctions. Under each of these four heads the Method of Comparison admits no doubt of being usefully applied in Cosmology. Its influence extends, as I have shown, even to the province of Mathematics. But its application in these cases, though serviceable as a verification of taxonomic principles, and also as a preparation for their exposition, is not sufficiently definite even to have called the method into existence. The true origin of every logical procedure is to be looked for in that field where its combined importance and difficulty stimulated the efforts necessary to elaborate it. And this is what Biology has done for the theory of Classification. It is here that its principles must be first acquired, although the widest field for their application will be found in Sociology.

The principal product of this transcendental branch of organic logic is the Scale of Life, which biologists, from Linnæus and Jussieu down to Lamarck and Blainville, have been gradually forming. But much as we may admire this result of their labours it cannot be regarded as mature, any more than the other results attained during the provisional and isolated stage of biological science. All that has yet been done must be

subjected to complete revision, these first and necessarily unphilosophical efforts being regarded simply as the scaffolding by means of which a true science of Life may ultimately be built up. And in this general statement I venture to include the animal series itself, although so many thinkers entitled to respect regard it as a doctrine finally established, and admitting only of minor improvements. We see evidence of its insecure foundation in the attacks now so frequently directed against its essential principles. It is true these may partly be imputed to the reactionary confusion which is now affecting all the preliminary sciences, especially Biology, and which must continue until order is finally established by the subordination of all of them to Sociology. Yet this is not the sole cause of these attacks. They would hardly be so general and so successful but for the defects and even the fallacies of systems formed under the provisional influence of empirical speciality. It would not be difficult to verify this statement by a direct examination of the animal series, were this the place to do so.

Errors of received views of Classification.

But I may so far indicate my meaning as to explain the profound irrationality of existing views upon this great subject, thus preparing the way for the true philosophical solution of the difficulties connected with it. Both these indications follow from the principles already established as the basis of an Abstract Theory of Life, which depends, as we have seen, upon systematic co-ordination of the three modes of Vitality.

1. It is presented as an objective reality..

The two principal defects in the biological series, as at present understood even by its ablest interpreters, are, first, the tendency to regard it as objectively real; and secondly, the incompleteness of its range.

And first, discussions suggested by it can have no issue so long as the series is regarded as an absolute expression of some external reality, instead of what in truth it is, a subjective logical instrument intended to assist us in investigating the more difficult vital problems. As viewed at present it must always be liable to be upset, unless all animals are included in it; the impossibility of which is becoming every day more evident. The exceptions to the rule, as thus interpreted, are too frequent and too incontestable to allow it to stand. But the case is wholly altered when it is regarded merely as an indispensable aid to our reasoning powers, which ought no doubt to correspond in general with the order of natural relations,

but which by no means requires that such correspondence shall be universal. From this subjective point of view the linear character of the series becomes unmistakeable. The principal work it has to do in assisting thought can be done in no other way. The very word *Scale*, or *Ladder*, is enough to show the fallacy of all attempts to substitute for linear classification, classification in two or even in three dimensions, a thing wholly alien to the true spirit of Taxonomy. As to any further additions to the animal series, it is very evident that taking merely the terms of which we have real knowledge, we have already a far greater number of species than is required for its employment as an instrument of research. It stands in fact less in need of laborious extension than of judicious reduction. I still, however, advocate the proposal suggested in my Positive Philosophy, of intercalating carefully a certain number of fictitious species, with the view of facilitating the more difficult transitions. Their introduction from this point of view would be perfectly legitimate, and would be more useful as a guide to thought than the much vaunted descriptions of extinct animals, which are perhaps in most cases hardly less imaginary. We who are substituting the conceptions of a true human providence for the fictitious providence of theology, need never fear to create an ideal order superior to the real, although in spite of its imperfections the latter must always remain the starting-point of our boldest mental efforts.

2. It is incomplete; not comprehending either Vegetal or Social life.

As at present constituted, the biological hierarchy has the essential defect already pointed out of being limited to the animal kingdom. The intermediate mode of vitality is thus represented in detail without any mention of the two extremes between which it forms the necessary transition. It is true that animality, from its nature, admits of more numerous gradations than can be found in the vegetable kingdom, where the only differences possible are those of intensity. Social life, on the other hand, offers a long series of phases; but the examination of these belongs not to Biology but to a distinct science. It is right therefore that the biological series should be concerned principally with animality, but it should not be exclusively confined to it. Its prolongation downwards to its vegetal source has already been attempted; but no thinker has yet conceived the notion of extending it upwards so as to embrace its ultimate term, social development. And extension in this direction is

even more necessary than in the other; directly relating, as it does, to the type on which the whole construction should be moulded. Zoologists still take for their central point the vague and irrational notion of Man; although it must be obvious to every one that our true nature can only be discerned in Humanity. As every animal species is potentially a collective organism, the growth of which has been more or less arrested, the true type of the biological hierarchy is only to be looked for in Sociology. Under the influence of the new philosophy therefore, or rather of the new religion, the system of biological classification will be entirely remodelled. Its true value will then be made manifest, and it will be placed beyond the reach of attack by being connected with the general system of social classification, as will be shown in the following portions of this Treatise. Guaranteed as it will then be both by the wisdom of the priesthood and by popular sympathy, it will easily repel the subversive attacks which at present paralyse its usefulness.

Such then is our final conclusion with regard to the Comparative Method. Biology is to be regarded as its source, Sociology as its largest and most important field of application. It is the most valuable contribution made by the highest of the preliminary sciences to Positive Method, and prepares it for at once proceeding to the elaboration of the final science. To complete these observations on the systematic reconstruction of biology I have now only to describe the arrangement of its subject-matter; its general character, both logical and scientific, having been sufficiently examined.

SYLLABUS OF BIOLOGICAL COURSE. pp. 532–540.

The simplest and briefest way of doing so will be to describe the philosophical course of forty lectures, to be given in the fifth year of Positivist education, as explained in the General View.

1. Preamble: containing three lectures on Method; four on Histology and Anatomy; five on Classification.

This course should consist of three very distinct parts: a statement of preliminary principles, mainly statical; a body of doctrine, for the most part dynamical; and a general conclusion, of an essentially synthetic character. Twelve lectures should be given to the first and third divisions, sixteen to the second.

In the three opening lectures of the introduction we shall have, first, the nature, the purpose, and the general arrangement of systematic biology; secondly, the improvements effected by it in cosmological methods; lastly, the logical processes peculiar to itself. The second part will discuss anatomical principles. Two lectures will be given to the abstract study of the ele-

mentary tissues, one to that of organs, one to that of combinations of organs in an apparatus. The third and concluding part, consisting of five lectures, will contain the philosophy of Classification, or Biotaxy: the first will explain the general theory of Classification; the second will describe the full range of the biological hierarchy through the three primary modes of vitality; the remaining three will be devoted to the ascending scale of animal life. Reducing this scale to what is really required for its main purpose, it will be possible to condense a systematic review of it into three lectures, taking successively the inferior animals, especially the Radiata, the intermediate orders of Mollusca and Articulata, and the higher animals or Vertebrates. Handled by men of real philosophic power, addressing an audience well prepared for their teaching, such condensation of these truths will render them not only more distinct but more precise, and certainly more effective than they can be in the diffuse treatment of our present scientific writers. Supposing further development of biotaxical principles to be necessary, it would be better to reserve them till we come to the direct study of Life, where they can be studied as occasion may arise, and as mere extensions of truths already established. The same will hold good of the four lectures on Anatomy, which also may require certain special additions. It is however very important to restrict the time given to studies of a purely statical kind. We should come as soon as possible to what is the main subject of Biology, the adjustment of Organisation and Life. It is of course understood that Positivist teaching is merely intended as a guide to reading and reflection, not in any way as a substitute for it. Scientific education has never yet been presented in a rational form, for want of any sound principles to direct it. Its empirical condition at the present time makes it difficult to conceive of the success with which it will be condensed under the encyclopædic system to which the new Religion will give rise.

Connection of Organ with Function never to be lost sight of.

Even in this brief treatment of anatomical and zoological principles, we must not omit to indicate their necessary relation with dynamic principles, and also their ultimate purpose as a preparation for the direct study of Humanity.

The only reason for studying Organisation, whether special or comparative, is to acquire a better knowledge of Life. And there is the less objection to thus studying the Organ for the

sake of the Function, that biological reasoning will soon cease to be hampered by the retrograde tendencies which still confuse our notion of their adjustment. In positive biology we do not admit agents without acts, any more than acts without agents. Our aim therefore should always be to establish a distinct relation between these two inseparable aspects of a perfectly homogeneous subject; so that, when the one is given, we may be able to predict the other. But we must entirely rid ourselves of the superstitious notion that the action of every organ is always perfectly healthful, or that every function has always the structure best adapted to its performance. The absolute doctrine of Final Causes must be rejected except so far as is consistent with the relative principle of the Conditions of Existence; a principle of far wider range and utility. The adjustment of function and organ must simply be perfect enough to render life possible. And while dwelling on this fundamental relation, it will be well to point out calmly the imperfections connected with it; not however in an anti-theological spirit, which by that time will be useless. It is especially important in Biology to explain that the order of Nature, imperfect everywhere, becomes more so as we pass to the more complicated phenomena. We shall thus be better prepared morally and mentally to deal rightly with the still greater and often irreparable defects which we find in the most complex Being of all. Thus too we shall see more clearly the superiority of human institutions dictated by Love and Intelligence, as compared with the blind results of external fatality.

Again, it should be clearly explained, even in this preamble, that knowledge of animal organisms is simply a preparation for the study of the collective organism to which the highest of them has given birth. This principle should be made specially prominent in the five lectures on Biotaxy. The animal scale will be represented as a systematic ascent from the vegetal to the social state, constructed of a sufficient number of terms to facilitate the mental transition. And as we have already connected the biological hierarchy with the series of cosmological phenomena, we shall at once have established the relation between Humanity and all the other modes of existence, the order of which it is her task to ameliorate. Her own evolution will at the same time present itself as the ultimate term in the series representing the principal stages of animal life. And as

the taxonomical lectures should indicate the dynamical aspect of her existence, so the anatomical lectures should indicate the statical aspect. For in the compound, as in the simple organism, we shall find the same general subordination of tissue, organ, and apparatus. While studying this gradation in the cases where the evidence of it is simplest, we perceive already the possibility of extending it further; and the consciousness of this ennobles these preparatory studies and preserves them from digression. Thus throughout this elementary part of the subject, the leading principles of Biology will always be regarded as stepping-stones to the fundamental conceptions of Sociology.

2. Main subject of the course. The nine laws of Life; sixteen lectures.

It was desirable to dwell in some detail on the systematic presentation of these preliminary conceptions. It will not be necessary to offer similar explanations with regard to the central doctrine which forms the main body of biological teaching. This has already been done at sufficient length in my remarks upon the three primary modes of Vitality. The sixteen lectures forming the intermediate division of the course will expound the fundamental Theory of Life. They will naturally fall into three successive groups, each expounding the three laws belonging to its corresponding mode. In fact the object aimed at in an Abstract Treatise on Life is to render these nine laws as clear and as precise as may be needed for their application to theoretic or practical uses. Any further specialisation would rapidly degenerate into academic frivolities, forbidden by true religion in the name of good sense and morality. As to the arrangement of this portion of the subject, five lectures will suffice for vegetal life; the seven that follow will treat of animal life, the principal field of Biology; the four that remain will complete the theory of vitality by introducing the study of the social state. My previous explanations will have enabled competent readers to define the subjects appropriate to each of these sixteen physiological lectures in the same manner as I have done myself for the twelve statical lectures. This comprehensive mode of regarding the higher physiology in reality originated with the genius of Bichat. In his admirable Treatise upon Life, now so little appreciated, the founder of anatomical analysis showed his extraordinary aptitude for true biological synthesis. But an effort so premature could not make way against the general impulses favouring the academical system, by which the science of Life was more and

more penetrated with the specialising and subversive spirit developed by inorganic studies. This first attempt at construction was soon left standing alone in the midst of incoherent researches on the details of functions. It waits completion and consolidation from the encyclopædic system instituted by Positive Philosophy in the name of the Religion of Humanity.

3. Conclusion; containing three lectures on Consensus; four on action of Environment; five on reaction of Organism.

In the last and synthetic division of the course the object will be to show the convergence of every branch of biological study in the correspondence, active and passive, of Organism and Environment. These twelve lectures, like those of the introduction, will fall naturally into three successive groups: the first three describing the general unity of the Organism; the next four the preponderant action of the Environment; and the remaining five, the series of reactions which constitute self-preservation. As in this conclusion I depart more widely than ever from the mode of teaching usually adopted, it will be well in order to avoid mistake to define its purpose more exactly.

The Consensus.

The principal aim in the three first lectures will be to correct the analytical tendency which more or less interferes with the abstract conception of Life, however thoroughly its synthetic character may have been established at the outset. The necessity of examining successively a number of functions which go on simultaneously, must always make it difficult to keep the conception of them as an indivisible Whole constantly in view, whatever precautions may have been taken by the most philosophical teacher. It is possible, however, to adapt our teaching to the synthetic character of the science. For the Comparative Scale of life presents a consecutive series, of which each principal term exhibits the life common to all forms gradually complicated by increasing specialisation of new functions; these being more and more elevated and less and less indispensable. Therefore, by following this ascending scale, it is possible in every dynamical exposition to retain a perfectly synthetic character when speaking of organisms which exhibit simply one degree of vitality over and above those of which the functions have been already explained. In a word, all that is necessary is that physiological analysis, like anatomical analysis, should invariably abide by the fundamental principle of decreasing generality and increasing speciality, which I have long ago shown to be the universal law of positive classification. By following this course the systematic perception of vital unity, realised at

first only in the simplest organisms, is gradually attained in the others, as our view of progressive development extends. But reached thus, it has naturally become obscure by the time that we come to the end of the Scale, and are examining the nobler organisms. Yet in reality it is in these that the consensus is the most perfect, although more difficult to grasp. Hence the absolute necessity of appending to the physiological course a special examination of this convergence, confining ourselves for the most part to the higher animals, and including Man, although he does not, strictly speaking, belong to the province of Biology. Thus the three first lectures of the concluding part of the course would be devoted, first, to a general review of Vegetal Life, and of the reactions which modify it; the second, to a similar review of Animal Life, including the influence of the two other forms; and the third, to the life of beings endowed with intellect and morality in addition to the inferior modes. In this latter exposition Biological science approaches as nearly as possible to the type which forms the subject-matter of Sociology.

The environment.

The organism having been thus reviewed as a whole we should proceed to the examination of its subordination to the Environment, a knowledge of which is presupposed from cosmological studies. We have thus to construct the general theory of organic environments; an entirely new branch of biology, of which Lamarck must be considered as the true founder, although with him it was too much mixed up with unfounded hypotheses as to the indefinite variability of species.

While speaking of this important subject, I must correct an error of encyclopædic arrangement into which I fell in my former work, through overstrained deference to the high authority of Blainville. In common with this great biologist I had treated this subject before physiology, and immediately after general anatomy. In me this error was the more serious that it was directly opposed to my invariable rule of postponing the study of intermediate questions to that of the two extremes between which they are to establish a connection. In the present instance it is clear that in the absence of preliminary knowledge of the living organism, the question of its relation with the environment can only lead to vague and incoherent speculations. No satisfactory conclusion can be arrived at till after a complete revision of the whole matter based on physiological

knowledge. Although I should have made this correction independently of any suggestions, as soon as the subject again came before me, I ought to mention that I was anticipated in doing so by Dr. Segond, a rising biologist, whose first studies have been so truly philosophical as to confirm my highest hopes for the speedy regeneration of vital studies under the direct impulse of the final science. And I have the more ground for this hope from seeing similar tendencies in other young and distinguished students of biology. They are strongly marked in all that is being done by M. Charles Robin, who, like M. Segond, fully accepts the encyclopædic system, and thoroughly recognises the scientific value of the influence of Character upon Intellect.

Dependent as it is logically upon the whole range of physiology, we need not wonder that the Theory of Organic Environments has made as yet but little progress, since its dynamic basis is still so imperfect. In this department nothing of importance has been added to the original outline sketched by the daring genius of Lamarck. The attention henceforth to be given to it will be one of the principal results of the reconstruction of biological study under the influences of Positive religion. Keeping clear of metaphysical as of theological ideas, the new biology will be in a position to determine the true influence, special or general, of Environment on Organism ; including the extreme cases where it acts as a disturbing force. While retaining the great principle of the substantial permanence of species, we shall thus discover the natural limits within which they may vary. We shall then be able to discuss such a question as that already referred to, the degree of change in the mode of alimentation which could be brought about by individual habit and hereditary transmission. It is probable that by combining these agencies the range of variation might be extended by human art so far as to transform herbivorous into purely carnivorous animals. But it is only by direct examination that we can discover the real extent of our limits. The knowledge of this, once gained in artificial cases, may be applied with even greater confidence to cases found in nature. We should thus have an explanation of the fact that the same degree of organisation often presents both modes of alimentation. Developing these brief remarks, the reader will perceive that the four lectures here described would lead up to the

great subject of organic perfectibility; first in plants, next in animals, and finally in Man, so far as lies within the province of biology.

Reaction of organism.

This last topic, of which our modern Hygiene gives but a very imperfect notion, may fitly terminate the course, since it is the most complex and most important result of the sum of biological researches. It is in fact identical with what has been mentioned before, as the direct object of the last five lectures, namely the general reaction of Organisms upon Environment. For the only object of studying this reaction is the improvement thereby to be effected in their external condition, and even in their own nature. And here it becomes specially evident that Sociology alone can discuss these questions adequately; Biology presenting them only in outline. The principal problem in this branch of study, that is to say, the total action of the Great Being on the Order which it endeavours to ameliorate, is one for which the mere biologist is wholly incompetent. Sociology alone can undertake the task; and not merely so, but from the logical reasons above mentioned it is one of the latest problems even for Sociology to solve, requiring as it does the full range of statical and dynamical conceptions presented by this science. Its extreme importance has always determined me to devote a special treatise to it, as indeed was promised in the last chapter of the Positive Philosophy. And even should personal difficulties make this impossible, the concluding volume of the present work will naturally indicate the leading principles. But though Biology cannot enter on this question, it should pave the way for it by examining analogous reactions in animals. In fact, without such examination there can be no adequate knowledge of their real life. All animals tend more or less to ameliorate their material condition: some rise even as far as to improve their physical nature: so that moral and intellectual progress only is exclusively reserved to Man. Judiciously extending this body of truth so as not to encroach upon the province of Sociology, we shall have an adequate basis for a true hygiene, public and private. We can then begin to carry out systematically the noble projects of Bacon and Descartes, who regarded Medicine as the scientific basis of organic amelioration. But while admitting the value of these preparatory studies, we must carefully avoid supposing that any rule of human conduct, however simple, can ultimately rest upon them as its foundation.

Moral progress must always be supreme over every other kind of progress. Consequently the most valuable conceptions of Biology form a wholly inadequate basis for the practical conduct of life. This must always rest on sociological principles, or otherwise its tendency is immoral, as stimulating the selfish feelings which it ought to control. I pointed out in the General View, and I shall make it increasingly evident, that the simplest rules of Hygiene are only secure when advocated on social grounds. Daily observation supplies confirmation of this truth. Biological laws are not really competent in this province except in the case of animals; and even here, as everywhere else, they should be subject to sociological control. Still they supply truths which ultimately take their place as elements in the final results to be established by Sociological Morality.

THEORY OF CEREBRAL FUNCTIONS, pp. 540–593.

We have now completed our general view of the systematic reconstruction of Biology. Describing first the leading characteristics of the science, we have inferred from them the true spirit of biological research, and the right mode of presenting its results. The importance and the difficulty of the task are obvious reasons for the space here devoted to it. Moreover, it was needful to establish in this the principal branch of Natural Philosophy certain elementary principles indispensable for the proper treatment of the subject of this treatise. The results obtained show already the capacity of Sociology for regenerating all the preliminary sciences. But I cannot conclude this chapter, long as it is, without adding for the same reason a further and more special reconstruction, of which I have already spoken: the Positive Theory, statical and dynamical, of the internal Functions of the Brain, which constitute our moral and mental life. The scientific necessity of this theory for the purpose of the next volume would of itself justify the prominence here given to it. Logically again, it furnishes the most conclusive evidence of the influence of the new Religion upon thought. We have seen that the reconstruction of the preliminary sciences must begin in that which approaches most nearly to the final science; and for the same reason the regeneration of Biology itself must be effected from above downwards. I complete therefore my survey of this regeneration, so far as my limits allow, by the discussion of this indispensable problem: in which the biological genius of Gall has opened the way, but which could never be satisfactorily answered without the light thrown

on it by Sociology. The theory which I am now about to put forward would form the subject of the thirteenth and fourteenth lectures in the physiological section of the biological course.

Appreciation of Gall's work.

In entering on this great subject I find it specially incumbent to render due justice to my principal guide. From the first origin of true biological science Gall attempted to bring the higher and more difficult problems within its range, and thus effectually to shatter the last link which chained Natural Philosophy to metaphysical and theological systems. And this bold project he realised to a degree beyond all that the most competent thinkers of his time had imagined possible. In a time when the attributes of human nature were narrowed down by all existing schools to mere intelligence, Gall boldly upheld in his own way the positive doctrine of the preponderance of the Heart over the Intellect: a truth indicated by the common instinct of mankind, but unknown as yet to science. He dissipated on the one hand the nebulous mental unity of psychologists and ideologists, by demonstrating the plurality of intellectual and moral organs. And on the other hand he removed the old biological error of attributing the higher functions to any but the cerebral apparatus. To appreciate the importance and the difficulty of this latter service we must remember that the passions were still referred to the vegetal viscera, not merely by Bichat, who never had the time to examine the subject with sufficient care, but even by Cabanis, who devoted such attention to it. At a time when naturalists by common consent were devoting their whole attention to dead animals, Gall took living actions, which he observed so admirably, as the foundation of his principal analysis of propensities and faculties. As a whole his system was a failure, because constructed without the aid of Sociology; but his imperfect results made it possible to proceed at once to the universal science for which this was the only preparatory step still wanting. As the founder of Sociology, I owed this special acknowledgment to the biologist who has done more than any other to free my philosophy from every trace of Ontology as well as of Theology. Most of his conceptions, not excepting the most important, require, as will be seen, to be entirely remodelled; but his general train of thought, and even his special investigations, will never fail to be of service. A mind so progressive as his was, was assuredly far better aware than those who claim to criticise or to follow him,

how purely provisional was the hypothesis upon which he was venturing. Although I did not know him personally, I cannot doubt that in his own way he was conscious of the intimate bearing of this intellectual problem upon the vast movement of mental and even of social reconstruction destined to take place in our century. And he would recognise, if now living, that the true theory of cerebral action must be reserved for the philosophy under the guidance of which that movement is proceeding. Should I myself fail in the attempt, begun now under better auspices than those of Gall, I should none the less persist in the conviction that there was no other method to follow, and that others must endeavour to apply it more successfully.

Character of present theory : (1) Subjective, *i.e.* functional ; (2) dependent on sociological observation, checked by Zoology.

The true logical principle of the theory lies, as I view it, in the subjective mode of constructing it. I have myself systematically subordinated anatomical to physiological considerations, regarding the determination of cerebral organs as subsequent to, and indeed as depending upon, the scientific study of mental and moral functions. This procedure has already been spoken of as a general type of sound biological reasoning, the present instance being only one of its more marked applications. It is but seldom that the functions of any organic apparatus are indicated by its structure. And especially is this true in the case of the Brain. Statical analysis here will result in nothing but a mass of discordant opinions, so long as there is no true dynamic theory to guide it. In point of fact this subject has always been treated by the subjective method, whether wisely applied or otherwise. It was the method chosen by Gall's disciples, and it was equally familiar to his adversaries, even to those whose opposition sprang from retrograde belief. The chief cause of the failure of most attempts hitherto made to localise functions has been, that intellectual and moral life has not been examined with sufficient depth. And here we see more clearly than ever the impossibility of handling this biological problem successfully prior to the study of Sociology, which alone is competent to deal with these nobler functions. The nature and the working of faculties and propensities being at bottom the same with individuals as with the species, it is only in this latter instance that they are sufficiently distinct and developed to be clearly understood. All that can be expected from observation of individuals is subsequent confirma-

tion of the laws which social evolution may have revealed. But it is only in the case of animals that such corroborative evidence can be really conclusive, because then only are we able to distinguish innate dispositions from modifications acquired by habit. Therefore, paramount as sociological considerations must be in this subject, the first approach to it should be made in Biology, so as to ensure proper weight being given to zoological considerations. For though our knowledge of the intellectual and moral nature of animals is still in its infancy, it has already shown the inadequacy of theological theories of human nature, and also the barrenness of all metaphysical hypotheses which have been proposed as substitutes. And it will now be of service in forwarding the construction of the positive theory, guarding us against exaggerated multiplicity of organs on the one hand, and the fallacy of unity on the other. As this is a subject in which theoretical difficulties are complicated by the bias of feeling, it is impossible to take too many precautions, if only we can secure freedom from prejudice and rationality of method. The adequacy of the criterium now proposed depends on the principle that all the tendencies really innate in Man are found also in the higher animals, though with every variety of degree. Therefore, if in studying Man we have regarded as elementary any function, moral or intellectual, which is totally absent in other animals, this alone is strong proof that what we wrongly imagined to be irreducible was in reality a complex result. We may feel sure that the corrections thus indirectly suggested will be borne out by a more thorough study of the subject. It has been in this way that I have gradually improved the cerebral theory here propounded during the three years previous to writing this Treatise. Sociological suggestion, checked by zoological verification; such is the general principle which I have followed in working out this branch of Biology.

Connection of Brain with the rest of the Organism too much neglected by Gall.

In defining its full extent, it must not be forgotten that the Brain should never be considered apart from the rest of the organism. Here Gall, whose genius was too purely analytic, is fairly open to criticism; nor is it a sufficient excuse that he naturally exaggerated the range of functions which observers previous to himself had ignored. His contemporary, Cabanis, who was discussing similar problems, but in a more synthetic spirit, upheld the great principle of Integration in vital pheno-

mena, a principle then represented chiefly by the traditions of the Montpellier school. As Gall's influence has done much to accredit this error of method, which is besides only too much in accordance with the scientific tendencies of the day, it is well that it should be distinctly rectified. I proceed accordingly to do so before entering on the direct explanation of my Cerebral Theory, which will be found represented in a tabular and systematic form at the end of this chapter.

Before Gall's time, the only functions which physiologists regarded as belonging to the Brain were those directly connected with the two elementary orders of external relations; that is to say, the passive function, Sensation; the active function, Motion. They misunderstood or left out of sight the intermediate processes, whether of Thought or of Desire, which, following on Sensation and preceding Motion, form the necessary link between them. These operations were still supposed by many not to exist in animals; and in Man they were partly explained by metaphysical abstractions, partly, and more frequently, referred to the vegetal viscera. A few clear-sighted naturalists, among whom George Leroy should be noted, had come after careful observation to the conclusion that all these hypotheses were equally false, but had not been able to substitute any systematic conception of their own. Now it was exclusively on these internal functions that the true founder of cerebral Physiology fixed his attention. He had a clear perception of two facts: first, that these functions were distinct from one another; secondly, that they were connected with the same organic apparatus. These two opposite conditions, equally necessary for the establishment of vital unity, were reconciled by his admirable conception that the Brain was an assemblage of several organs, some with intellectual others with affective functions. But the mind of this great biologist was not sufficiently synthetic, nor had it passed through adequate scientific training. The functions which he ranked, and with perfect justice, as the highest, absorbed his attention, to the exclusion of all others. So entirely was his mind preoccupied with them that he omitted to examine their obvious relations with the external functions of the Brain, restricting the range of these latter, of Sensation especially, far beyond what was necessary to rectify previous exaggerations. *A fortiori* was he disposed to ignore the connection of intellectual and moral organs with the

other structures of the body. The influence of the vegetative viscera upon Thought and Feeling is obvious in itself; and many of our common notions testify to it in a vague and confused way. But by Gall it was entirely neglected, as well as the converse influence of the Brain upon the Body. Two such serious defects roused abundant and eager opposition to the theory; and exaggerated though this has been, it was certainly not ill founded. As is but too often the case, Gall's disciples resembled him in nothing but his errors. They invented, what he had always carefully avoided, their most unfortunate title of Phrenology, and endeavoured to form their cerebral notions into a body of truth wholly dissociated from general physiology; and thus it fell into the hands of special adepts who were often destitute of the smallest scientific training, even in Biology. Thus was brought about the ultimate failure of an attempt admirable in itself, but begun without the conditions essential to success. Still, though no special discovery resulted from it, it initiated a vigorous movement, which, when properly systematised, will soon lead to conceptions of a more permanent kind.

It follows therefore that the new cerebral theory must be before everything synthetic; keeping the entire organism constantly in view. Being distinctly and avowedly subjective, it will be adapted the more easily to this fundamental condition, without which, so far from systematising vital unity, it would only stimulate the dispersive tendencies now existing. The objective check maintained by zoological observation will ensure the reality of the theory from errors which too exclusive concentration on its immediate purpose might otherwise suggest. The first point will be to mark out the direct relation of intellectual and moral organs with the mechanism of sensation and motion. And meantime room must be left to express the twofold connection between the brain and the vegetal viscera, as maintained by the various nerves that pass between them.

From the study of cerebral functions we may determine the number of cerebral organs, and their relative position.

Such then are the principal dynamical conditions of the cerebral theory here offered. Its logical principle has been already explained. But to make the manner of its construction perfectly intelligible, one further explanation is yet necessary with respect to its statical or anatomical aspect.

It was common in ancient times, when Anatomy was little understood, to infer the Agent from the Action. Modern biologists shrink from adopting this course. They have not yet

ventured to rise beyond servile imitation of the methods adopted in Cosmology. But the impulse of sociological study will enlarge their range of view by habituating them to regard truth from the subjective point of view, without at all impairing the proper influence of the objective spirit. The disposition to determine organs by studying their functions is so thoroughly adapted to the general character of the cerebral problem, that it forms the common starting point of all who investigate it, whatever may subsequently be the difference of their methods and results. The first scientific question which presents itself, that of the number of cerebral organs, no one has ever attempted to answer in any other way. In a congeries of organs so intricate as the Brain, parts are more closely connected, nay more homogeneous, than elsewhere, as might indeed be expected from their more intimate dynamical correlation. Consequently mere anatomical study would never have led to the discovery of the plurality of organs. This principle, the foundation of any true theory of the subject, was first indicated, and indeed established, by direct analysis of the corresponding functions. Carrying the same reflection a step further, we shall see that the number of organs must also be established in the same way. All attempts to determine it by direct observation end in nothing but interminable disputes, which can only be brought to an issue by properly conducted examination of intellectual and moral actions. The reason why Gall fixed too large a number of organs, a fault exaggerated by his disciples, was that he had not studied the functions with sufficient care. In this first part of the problem there can be no doubt as to the right path to follow.

But our point of departure involves consequences which many of those who admit the principle vainly endeavour to shirk. If we recognise the incompetence of mere anatomy to determine the actual number of cerebral organs, we can hardly fail also to perceive its incompetence for the second part of the problem, the determination of their respective positions. Gall laid down the luminous principle that the arrangement of organs would be found in conformity to the relations of the corresponding functions, so as to allow the brain to work as a harmonious whole. The adoption of this principle implies the perfect competency of the subjective method to deal with the subject. In fact there is no other way of entering upon it; in

the present state of the question there is nothing for the objective method to rest upon. It is quite true that Gall himself would seem to have arrived at his localisations anatomically; following, according to his own account, a purely empirical mode of procedure. But I can hardly suppose that this was anything but a didactic artifice, designed with the purpose of meeting the first obvious objections. How far such a latent motive was excusable, or even useful, is a point I will not examine. But I entertain no doubt that Gall was as much guided by the direct study of functions in localising his organs as in fixing their number. It is possible that his disciples, working on the basis which he left, may have proceeded objectively in the new localisations which they have attempted with doubtful success. But evidently this could not be done at starting; no plan but the subjective was possible. While therefore I shall have frequent occasion to rectify Gall's opinions on this subject, I shall in fact merely be making better use of the method pursued by himself in his original meditations, although he may have thought fit subsequently to put his didactic exposition into a different shape.

But their form, size, and structure, must be reserved for objective investigation.

Determination of the number and the locality of cerebral organs is, so far as I can see, the furthest limit of the subjective method in this enquiry; at all events for the present. No further advances can be made as yet on this path, except perhaps a few general indications of the relative volume of organs, as indicated by the energy of the corresponding function. But these must at best be vague, and could not lead to any real knowledge of their form or even of their size. In this part of the subject the objective method, to which we have now given a rational basis, is alone competent. The same may be said *a fortiori* of all that relates to structure properly so called. But important as such additional knowledge would undoubtedly be, it is not indispensable for effective application of the true cerebral doctrine, as well for theoretical as for practical purposes. In the cerebral theory here presented, I shall keep within the existing limits of positivity as indicated by the only method competent to found such a theory; leaving to my successors the task of ultimately employing the objective method as soon as the time for it shall have arrived. But the difficult sociological questions treated in the second and subsequent volume of this work will show the influence exercised by

this Theory of the Brain even in its purely subjective state; and indeed many remarks in the General View were implicitly suggested by it.

General classification of cerebral functions, pp. 548–557.

The characteristic feature then of this most synthetic of all biological problems is the entire subordination of statical to dynamical conceptions. The gradual process of discovery must in fact take place in both simultaneously. The principal difficulty in either case is to arrive at the true classification of intellectual and moral functions, as indicated by careful and comprehensive examination of the nature of man and animals. If this can be done accurately, it will soon enable us to distinguish clearly both the number and the locality of cerebral organs. In my Positive Philosophy I have already pointed out the importance of this first step in the investigation, expressing regret that Gall paid so little attention to it. But I could not at that time allow myself to be delayed by any preliminary enquiry, not even by this, longer than was absolutely necessary to enable me to rise through the Scale of the sciences up to Sociology. It was necessary to found this science first, before attempting any of the special subjects to which it was to furnish the key. I limited myself therefore to a philosophical examination of the principal results arrived at by Gall, pointing out a few obvious corrections and explaining in general terms the improvements which cerebral science still needed. When I had laid the foundations of Sociology, and thus constituted Positivism, I felt that I had now finally reached the point from which a systematic revision of all scientific questions became possible; and at the close of my work I expressed the intention of undertaking such a revision. It should evidently begin with the higher branch of Biology, so intimately connected with the present Treatise; the purpose of which, as I then mentioned, is to construct a coherent system of universal science for which my former work had laid the true basis. But the preponderance of Feeling over Thought, the gradual result of my long philosophical career, and already established as the central principle of the new Synthesis, had first to be realised as a truth of personal experience. This moral regeneration was affected at the conclusion of my arduous labours by a sacred influence, which though, alas, of too brief duration, is yet ineffaceable. Being thus the first to be set free from revolutionary tendencies, I felt myself called upon to follow my true mission, the

systematic reconstruction of the intellectual and moral order. And here it was that I found it impossible to proceed satisfactorily with the present Treatise until I had remodelled Gall's great theory. When the immediate and most just claims of sorrow had been satisfied, the first philosophical result of the renovation which I had experienced appeared in the statement of cerebral functions completed on November 2, 1846, and appended to this chapter. From this date the second portion of my public career has continued without interruption. The classification of cerebral functions has frequently occupied me since that time, both when I was writing the General View and also during the two courses of lectures, the one doctrinal the other historical, which preceded and followed that work. In the three succeeding years the Table has undergone ten revisions, the last of which (January 4, 1850) seems to me to be final. It is the one adopted in the exposition of the theory here presented.

Acceptance of Gall's distinction of affective from intellectual functions; rejection of his distinction of propensities from feelings.

All the essential differences between this theory and Gall's spring from this process of classification, which hitherto had been entirely ignored, and which indeed could only emanate from sociological suggestion. The only division of central functions to which he had attached real importance, was the fundamental distinction between affective and intellectual functions. This indeed had always been recognised by common consent; and the only merit of Gall in this respect was to have avoided the philosophical illusions by which the good sense of ordinary men has been set aside. His other divisions, whether of mental or moral aptitudes, were almost arbitrary. And with regard to the latter I may mention here his principal mistake, which I was myself slow in discovering, that of regarding propensities as different from feelings. At the time when I was writing my philosophical treatise I was still too much influenced, naturally enough, by the weight of his authority to reject this distinction. How unmeaning it is appears from the impossibility of defining it clearly in detail. Each of the affective functions may in fact be called a *propensity* in the active state, a mere *feeling* in the passive state. The distinction therefore is only that of the two alternating modes of every positive force, of vital and animal forces more especially. We find the same alternation in intellectual functions, although separate names have not been applied to the two states. The greater energy of the moral

functions renders the distinction more conspicuous. A division of this kind was incompatible with any true cerebral classification. Ultimately I set it altogether aside, and retained only the fundamental and commonly received distinction between Intellect and Heart, insisting upon it even more systematically than Gall had done. So far I have simply consolidated and developed the great and unappreciated service of this philosopher in giving to an important practical truth the stamp of theoretical coherence. The preponderance of the Heart over the Intellect becomes thus an acquisition of positive science, and rises beyond reach of sophistical discussion. Doubtless Sociology alone can give it full validity, showing it to be one of the foundations of true religion. But it is important to show that it originates in Biology, and that it is exhibited throughout the animal kingdom; an origin which excludes the suspicion of overstrained ethical feeling. In the classification of cerebral functions here put forward, the relation in question is indicated by the number of functions and of organs in each division. Thirteen are given to the Heart, five only to the Intellect. The moral organs moreover may be presumed to be more voluminous than the intellectual; and thus we have a complete anatomical representation of the superior energy of the corresponding attributes.

Adopting the principal dynamical division of Gall, we shall be led to admit also the statical division which completes and consolidates it. Taking the evidence which he brings forward as a whole, and waiving his special localisations, it is difficult to resist his conclusion. I will only remark that the subjective method here employed would have led still more directly to the same result. The method is in fact nothing but the logical application of the relative principle, which permits, or rather which binds us, to form in every enquiry the simplest hypothesis compatible with all the phenomena before us. This I have always considered as the essence of the true scientific spirit, even in mathematics. Now in this first stage of the cerebral problem, all that is really known are the two external mechanisms of sensory and of motor nerves. We must regard the Brain as forming an anatomical connection between these, in a way that shall conform to their respective functions. The arrangement of the two parts of the central apparatus will therefore be adjusted to these two extreme terms in the cerebral system. And thus we should be led to place the

intellectual organs in front, as being more connected with the various mechanisms of sensation; their business being to concentrate and complete internally the external process. The rest of the Brain would thus be appropriated to affective functions not directly connected with the outer world, and with no immediate result but the formation of instincts. And it confirms this view that we should be led on other grounds to place the moral organs backwards, because of their connection with the principal mechanisms of motion; whereas the centres of intellectual operations, which do not of themselves lead to motion, would be more remote from them. The entire coincidence of these two fundamental conditions seems to me to be decisive with regard to this part of our subjective procedure.

Division of moral functions into *Heart* and *Character*.

So far then, the new cerebral theory and the old continue parallel. Beyond this point they diverge widely, notwithstanding partial coincidences. I reject, as stated above, Gall's principal division of affective functions; and, as I shall show afterwards, his classification of intellectual functions is even more erroneous. But I must dwell a little longer on the importance of our common basis, in which the sociological method has simply to systematise the result of biological induction. It is necessary to understand, before we go farther, the essential harmony of action between Intellect and Heart. The old word Soul should still be adapted to modern ideas so as to express their combined operation; it is as necessary as the two others, and is by this time quite as free from any mystical association. First, however, I must explain that moral functions should be divided into the Affective, properly so-called, and the Active or practical. The former precede intellectual operations, the latter follow them. The relation therefore between the Heart and the Intellect cannot be well understood without explaining this preliminary distinction.

In my Positive Philosophy I have often dwelt, even when treating of cosmological subjects, on the desirability of associating every great theoretical conception with the conclusions arrived at by the practical sense of mankind, of which true science is simply the systematic development. And this universal maxim is specially applicable to the study of moral questions. Here the reasoning powers of the average of men have been more exercised, while at the same time systematic thought has been less maturely developed. Of all thinkers

Gall was the most ready to recognise the value of the aid thus afforded. Yet he did not avail himself of it sufficiently. Had he consulted this valuable and spontaneous source of truth more carefully he would have avoided the mistake of contrasting propensities with feelings, and would have recognised the new distinction which I am here substituting. The common sense of mankind has long ago expressed itself upon this point by its natural interpreter, Language, the growth of which emanates essentially from the people. The distinction I am speaking of is distinctly indicated in two corresponding ways, each extremely familiar, especially in the French language; the twofold meaning of the word Heart, and the common acceptation of the word Character. The first word is used, in its moral sense, sometimes to express the feeling prompting us to action, sometimes the force which carries that feeling into effect: the metaphoric use of the word being equally applicable, whether it is Intention that we are considering, or Execution. The distinction becomes specially apparent when we contrast the moral qualities of the two sexes. Here *Heart* expresses tenderness in the one case, energy in the other. Again, the sense in which the word *Character* is most frequently used, and which is implied when the word stands alone, certainly refers to that combination of practical qualities, on which, even in the case of thinkers, all effective results directly depend. It is a metaphor in which the judgment of men has powerfully expressed the fact that the individuality, whether human or animal, is ultimately completed by the faculties of action, and that without these all other attributes, intellectual or even moral, would become useless to their owner.

There can be no question therefore as to the entire reality of the distinction here adopted from popular usage, and introduced systematically into cerebral physiology. It denotes the difference which there must always be between tendencies constituting motives for action, and aptitudes to carry designs once formed into effect. The first are more spontaneous, and only involve the speculative process so far as is necessary to examine the propriety of the desire; the second must be based upon knowledge of the external aim, with a view to accomplish the intended action. These latter are therefore more connected with the intellectual functions. Their position therefore should be intermediate, or even nearer to the frontal than to the cere-

bellar region. This arrangement will become more definite when I have defined the elements belonging to each group.

Here then we have a second step towards the construction of the Positive Theory of the human or animal Soul, viewed statically or dynamically. Establishing as our first division that of Heart and Intellect, we find the moral functions naturally divided into affective impulses and active tendencies; and thus we arrive at the three normal terms, Heart in the narrower sense of the word, Intellect, and Character. In this new division the name Heart remains appropriated to the attributes most characteristic of it, as the ordinary use of language requires. The binary arrangement is preferable so long as we regard the cerebral organism as a whole; it stands before us then as an ultimate compound of two elements. But we pass to the ternary arrangement as soon as we endeavour to represent the organism in active operation, this being the mode required in every logical progression. Under this, which is the more usual mode, the Brain is represented as appropriated to three orders of internal functions; the preponderating portion of it, and more especially the posterior region, being given to Feeling; the anterior portion to Intellect; the central portion to Activity. And to make this general arrangement clear from the first, I may at once mention that of the eighteen cerebral elements which I propose, ten are allotted to the Heart, five to the Intellect, three to the Character.

The synthetic form of the cerebral theory here presented makes it possible to examine the nature of the Soul more closely without entering into any statical or even dynamical details. It offers a direct representation of the general consensus between Affective life, Speculative life, and Active life, so far as this is common to all animal natures. Feeling or Instinct stands out as the essential centre of moral existence, in which otherwise there could be no unity. Through intelligence and activity the animal comes into relation with external bodies, either in the way of perceiving them or of modifying them. With this view the two corresponding regions of the brain are connected respectively with the mechanisms of Sensation and of Motion. The affective region, on the contrary, I conceive as being usually cut off from all immediate relation with these external means of knowledge or of action. Its only communication is with the two other cerebral regions, by the

agency of which it is brought indirectly into connection with the outer world. In this way it receives the impressions by which its emotions are aroused, and it transmits the impulses to which these spontaneous desires have given rise. Inversely, through the same channels of communication, it may act as a stimulus to the speculative functions, or may be itself re-excited by practical actions. The exact nature of the communication here indicated is a point which very possibly may never be known. It is not carried on by nerves, properly so called, with fibrous envelopes. This however is not a matter of very great importance.

Affection the chief source of spontaneity and of unity.

The chief source then of Spontaneity, whether in animals or in man, lies in the affective region of the Brain, that which is least dependent on external relations. Doubtless each of the other regions has its own inherent tendencies, acting in accordance with the first of the three laws of animal life. This is the case even with the speculative region, the least energetic of the three. There is in it, unquestionably, as in the others, the need of independent exercise, which when satisfied affords immediate satisfaction apart from any practical purpose. All the higher animals prove this unmistakably whenever their material existence is so far guaranteed as not to be a constant source of anxiety to them. It would be needless to bring forward evidence of similar spontaneity in the case of the practical functions, the tendency of which to independent activity is far more strongly marked. When insufficiently gratified it gives rise to the remarkable phenomenon of *Ennui*, which, as George Leroy has clearly shown, is far more closely connected with the active than with the speculative functions. As we rise higher in the scale of animality, we find this independent working of the intellectual and active powers increasing in importance, even when the life of the animal is solitary. Notwithstanding all this, however, these functions never become, even in our own race, the principal and permanent motors of existence. The real unity of life depends invariably upon affection of one kind or other.

So far as the active faculties are concerned this fundamental truth has never been seriously contested. It is evident that when left to their own spontaneous working, unguided by desire, they can result in nothing but disorderly agitation, ending soon in profound lassitude. But by a contrast which

seems at first sight unaccountable, the corresponding need of moral impulse in the case of Man's intellectual organs has been often denied, although these are far less energetic. The contradiction is easily explained when we remember that the principal characteristic of our race, Social transmission, depends mainly upon the Intellect, which thus is called into frequent and special exercise. In the case of animals, where this service is not required, everyone must see that Speculation is essentially subordinated to Desire, and the more so that as Desire in their case has a narrower range, its action is more readily appreciated. The light thus furnished by Biology will enable us to resume the application of our theory to the case of social phenomena without danger of error. And we now see that intellectual exertion can only result in vague and incoherent observations, which become soon very fatiguing, unless it be carried on with some affective purpose in view. The only real difference in this respect is the nature of the motive, which may be either personal or social. And it is not merely in directing and co-ordinating intellectual exertion that the motive is required. The fixity or strenuousness of the effort depends upon it, even in the simplest operations. Common language, the faithful and unconscious depositary of the world's practical wisdom, testifies frequently to this relation in many familiar expressions implying the necessity of some kind of desire, selfish or unselfish, as a condition of observing or of reflecting to any purpose. The popular judgment has always refuted the vain dreams of theorists as to the spontaneous origin of our great mental products. Whatever the intrinsic pleasure of intellectual labour, it is certain that it cannot be sustained in full energy except for the purpose of directing a course of action prompted by some kind of passion. In a word, the consensus in the working of the Soul, whether animal or human, is exactly what is described in the words accompanying the tabular statement appended to this chapter. We act from affection; we think in order to act.

From the biological point of view this important truth will hardly be disputed, when we think how feeble is the development of the intellectual powers in the solitary state, and how overpowering is the preponderance of animal appetites. It is however in Sociology that its principal application lies, though the difficulties connected with it are greater. Since Progress

invariably consists in the development of Order, it is certain that the necessity of Affection as the impelling principle of Thought and of Action will be found greater in the higher race than in the lower, and will increase as the race advances. Were it otherwise, the unifying principle would be acting with diminished force in the very cases where, owing to greater variety and activity of tendencies, the difficulty and the importance of consensus were greatest. In fact, however, the reverse is the case. As Life rises higher, vital unity becomes more perfect. The full explanation therefore of this fundamental harmony of the soul is reserved for the next volume, although it was well here to give the first intimation of it. The proof that Sociology alone can give thorough coherence to biological notions of this kind, is the slight effect that they produced upon Gall. In spite of his real perception of the harmony of animal functions, he lapsed into serious errors with regard to it which he could not rectify, nor indeed had he a sufficiently strong sense of the bearing of the conception. Its full scope can only be seen in the case of Social Life, where the need for unity being greater, the source from which alone moral consensus can proceed becomes more clearly visible.

Affection, unlike Intellect or Activity, never completely intermittent.

To illustrate still further the natural preponderance of affection over speculation and action, they should be compared with reference to the property of intermittence which belongs to all animal functions. There can be little doubt that the three divisions of central cerebral functions are all subject to this general law no less than the sensory and motor functions. It is by no means easy at first sight to reconcile this necessary alternation of action and rest with the degree of continuity, however partial and temporary, needful for the efficiency of every vital process. But we find a speedy solution of this difficulty in the symmetry of the organs here considered. We have only to suppose that internally as well as externally the right and left halves of the mechanism function alternately. Bichat was the first to point out this symmetry as a statical characteristic of animality, without however perceiving very distinctly its relation with the law of intermittence. Gall alone rightly apprehended the connection which I have now merely to render more complete and distinct. And here an important distinction must exist between the affective region of the brain and the other two regions. The direct relation of these latter

with the external mechanisms of sensation and of motion renders them almost as subject as these are to the law of intermittence. But the cerebral seat of Affective life, on which the consensus of the whole organism depends, calls for more sustained activity. Indeed my own view is that as a whole it never rests, except so far as rest is implied in the alternation of the symmetric parts. During the suspension of external impressions and of the motions connected with them, the other two regions of the brain are periodically lulled to sleep. But the affective region is in constant wakefulness, maintaining the unity and continuity of the animal existence. Moreover we must bear in mind the influence exercised by the brain over the vegetal functions placed in direct and special relation with the principal instincts. On both these grounds it seems possible that the activity of this region of the brain may be greater during sleep, while the two other regions are at rest, than during waking. The inactivity however of these latter almost always conceals these affective operations, so that they seldom leave any distinct and permanent traces. In dreams or in delirium we are sometimes able to watch them; and we then have the surest guide to the dominant emotions, which are then free from all external constraint.

And thus systematic thought confirms that spontaneous suggestion of the heart which I took as the special motto for the General View: 'We tire of thinking, and even of acting; we never tire of loving.' The celebrated and barren discussion of metaphysicians as to the intermittence or continuity of the higher vital functions is now, by the positive theory of the soul, brought to an issue. We have in fact periodical suspension, either partial or complete, of the speculative and active functions of the brain; connected as these are with the external mechanisms of sensation and motion, which are obviously and necessarily discontinuous. But the preponderating region of the brain, shut off from all direct connection with the outer world, may and indeed must function without intermittence, through alternation of its symmetric parts. Thus Affective life is in a double sense the source of unity for the human or animal soul. The consensus of the functions and their continuity both depend upon it.

Starting with these fundamental principles I now proceed to explain my cerebral theory in detail. I shall begin with the

Affective functions, pp. 557–571.

analysis of the moral functions, the preponderance of which as a whole has been already explained. This will throw light on the analysis of the intellectual and active functions to be examined afterwards.

Distinction of personal from social feeling.

Affective Life, which governs and harmonises the whole of existence, falls into two principal divisions; personal and social. In the very lowest forms of life, those in which there is no separation, or incomplete separation, of sexes, we only find the first form. But most of the higher animals exhibit the second form as undeniably as Man, though not to the same degree. There are consequently, as I have already remarked, two modes in which vital unity is attainable; it may be reached through Egoism or through Altruism. And I have shown that the full development of the latter mode is peculiar to our own race. But although this is the case, yet the fundamental struggle between two kinds of affective force, of which so much has been said by writers on human nature, is not confined to Man. There can be no question of its existence, though in a less intense and also in a less continuous form, in all the principal types of animal life. It must not therefore be left unnoticed in Biology, though the systematic examination of the question belongs to Sociology, where the subject is considered in the most fully developed instance.

Between these two conflicting elements there can never be a perfect balance. Equilibrium of the whole is possible only by one of the two gaining the preponderance. The social instincts, though not destroyed nor neutralised by the personal, are yet in most cases under their dominion, even in our own race when principles of action depend upon purely individual considerations. Indeed such dominion is necessary to enable the animal functions to do their proper work; relating as this always does to vegetal existence, the constant and resistless pressure of which can alone give fixity to the higher vital processes. The same pressure of the lower functions exists in reality in the human race; but this may show itself indirectly in a way tending towards the second and opposite mode, in which each lives principally for others. For if there were no personal wants stimulated by the necessity of preserving life, our collective existence would be as objectless and undefined as the life of the individual. Here then we have the great problem of human life as already presented in the General View; the whole of this

Treatise being an attempt to solve it. The problem consists in subordinating as far as possible the personal to the social instincts, by referring all to Humanity. The Social State is constantly tending towards this complete inversion of the individual arrangement by the fact that it necessarily develops the weaker instincts and checks the stronger. And though for reasons already explained it is only in our own race that this tendency can become strikingly prominent, I have sufficiently proved its existence in all the higher races, each of whom might, under certain circumstances, have spontaneously developed into a collective organism. We must therefore take this permanent antagonism between the social and personal instincts as the natural basis on which to construct the true theory of Affective Life; a theory originating in Biology, and fully developed in the final science.

Such then is the first and principal step in the positive classification of elementary propensities, ranged according to their decreasing strength and increasing dignity. It is clearly in accordance with the general law which has been shown to govern all classifications, beginning with that of the abstract sciences, the law of diminishing generality and increasing complication. Applying this taxonomic principle to the case before us, we have now to decompose, first the personal, then the social instincts, into propensities insusceptible of further reduction; and secondly, so to arrange them that their succession may present a developed series between the two terms already fixed. We must intercalate, that is, between complete Egoism and complete Altruism, the various intermediate affections; the plan followed being always that of binary decomposition. Following out the general spirit of the subjective method; the dynamical aspect will, as before, be presented first, and subsequently the statical.

Anatomical relation of personal and social instincts.

Adopting this logical order, I have first to complete the preliminary outline of the affective series by assigning the anatomical position of the two extreme terms. Here however we shall find no serious difficulty; we are guided by the principles previously laid down as to the harmony which regulates psychical operations. And the result arrived at inspires the more confidence, that it agrees in all essential points with the leading ideas of Gall, whose genius so often compensated the errors of his method. We have already accepted the view that

cerebral functions are higher in quality and inferior in force as we proceed from behind forwards. This of itself would lead us to appropriate the anterior extremity of the affective region to the social feelings, reserving the larger portion for the personal instincts; the hinder position always belonging to the less noble propensity. And we find this arrangement confirmed by the necessity of placing the benevolent inclinations in proximity to the intellectual organs. Between these two higher orders of attributes there is a special and intimate harmony. Altruism, when energetic, always directs and stimulates intelligence more effectively than Egoism, even in the lower animals. It supplies a wider field, a more difficult aim, and also a larger share in the common effort. This last point especially has not been sufficiently considered. Egoism has no need of intelligence to perceive the object of desire; it has but to discover the modes of satisfying it. Altruism on the contrary cannot so much as become acquainted, without intellectual effort, with the external object towards which it is ever tending. The connection of Intellect with Love is more prominent in the Social State, because the collective object of sympathy is more difficult of apprehension. But even in domestic life it is always clearly visible among all the more highly organised races.

Intermediate propensities.

The general outline of Affective Life is now before us under the statical as well as the dynamical aspect. The next step will be, before proceeding to further detail, to introduce the intermediate class of propensities; and thus to transform a combination of two elements into a series of three terms. Here we shall find no difficulty either anatomical or physiological. Evidently, between the direct self-interest of the isolated individual and social sympathy, properly so called, there is an egoism of an indirect kind, which, without ceasing to be personal, yet springs from the relations of the individual to his fellow-beings, with the view of rendering them a means of personal gratification. The small group of organs appropriated to these intermediate functions would be situate at the upper part of the back region of the brain. The full description of it will come afterwards, between that of pure egoism and pure altruism. In this way we shall at once be able to arrange the affective functions in a progressive series, proceeding always on the plan of binary decomposition and ternary succession.

Enumeration of ego-

Self-interest of the direct kind, the primary and funda-

mental form of Egoism, may be divided into the instincts of Preservation and of Improvement. The first of these is obviously the most energetic and the most universal. It is at once less noble and more indispensable than any other. We find it under one form or other in the lowest of the animals, which but for it would very soon perish. But it is rarely that this predominant instinct is found unmixed, and the ordinary conception of it as such is vague and confused. The positive conception distinguishes the tendency to preserve the Individual from the tendency to preserve the Race. To the biologist the separation of the two instincts will be evident enough, since in the lowest part of the animal scale, where the sexes are not entirely separate, the second instinct is not perceptible. In the Table appended to this chapter the first is called the *Nutritive* instinct, Nutrition being its principal attribute. But it should always be borne in mind that besides nutrition it includes all that relates directly to the material preservation of the individual. It is the only instinct which is strictly universal, no animal supporting life without it. Even in the human race it is the foundation on which all the others are raised. Dante's incomparable genius indicates its inevitable preponderance in the profound words which end the striking narrative of Ugolino. The necessities of hunger clash with the agonised feelings of the father; *Poscia, più che 'l dolor, potè 'l digiuno.*

istic propensities. I. Self-preservation.

And yet Gall omitted this instinct altogether. Perhaps indeed the very fact of its predominance induced him to give way to the old physiological prejudice that it could not be fixed in any special site. But it is only in the lowest grade of the animal scale, where all anatomical distinction is lost in perfect homogeneity, that such an organ is likely to be wanting. Everywhere else we should expect to find it; and its importance will increase as the animal is higher in the scale, because the propensities become more various, and their divergent forces would distract attention from self-preservation were there not a special organ appropriated to it. Gall's successors have indeed looked for it, but in a confused and empirical way. The principles on which we have been proceeding would seem to leave little doubt, in minds penetrated with the true spirit of our subjective theory, as to where it should be placed. The nutritive instinct would occupy the lowest position in the brain, as near as possible to the motor apparatus and to the vegetative viscera.

I would place it therefore in the median portion of the cerebellum, leaving the remainder of this large region for the reproductive instinct, to which Gall had appropriated the whole.

Preservation of Race. 2. Sexual instinct. 3. Maternal instinct.

We come now to the preservation of the Race. Here we have obviously two separate instincts, the sexual and the maternal; the former being superior in energy, inferior in dignity. Throughout the animal scale we find the distinction between them clearly marked. We have cases where there is perfect separation of the sexes, and yet but little care for the offspring. Gall appears to me to have been right in his opinion of their situation, with the exception of the alteration which I have just introduced. His localisation conforms here to the subjective Method, which obviously would have pointed, even without his aid, to the same result.

Here then we have in detail the three first terms of the affective series; that is to say, the three instincts of preservation, nutritive, sexual, and maternal. The increasing rank and decreasing energy on which the classification depends are here very clearly marked. And, statically, the gradation from the median region of the cerebellum to the lateral, and thence to the medio-posterior region of the cerebrum, is not less apparent. The continuity of action, which I have already spoken of as common to the whole affective region, obtains unquestionably in the first of these three instincts. The solicitude for self-preservation is unremitting. The other two, though at first sight seeming intermittent, will not be so regarded when we look at the cases where their action is not thwarted by external restraint. When the natural satisfaction of the instinct is impeded, as is often the case, it does not, in the higher races at least, cease to act, but simply seeks another issue.

4. Destructive or Military Instinct. 5. Constructive or Industrial instinct.

Succeeding to the series of preservative instincts, we have two of a more elevated and less universal kind; the instincts of Improvement. I have named them in my Table the *Military* and the *Industrial* instincts, giving a more systematic and extended meaning to terms hitherto limited to human affairs. Higher and less energetic than the preceding, they are more directly concerned with the animal functions, whereas the former were principally concerned with vegetal life. They belong, nevertheless, like those, to the egoistic division; since in stimulating the animal to ameliorate his condition they appeal only to self-gratification. Such amelioration may be

attained by either of two ways, which often co-exist: by the destruction of obstacles, or by the construction of instruments. The first mode is by no means confined, as might be supposed, to the carnivorous races. On the contrary, it is more universal than the second, being at once more indispensable and more easy. No animal, whether herbivorous or carnivorous, can exist without destroying many of the objects round it; and not merely inanimate but animate objects, sometimes indeed, as in the case of sexual combats, beings of its own species. Spurzheim showed sound judgment in generalising the conception of this instinct, which by Gall had been restricted to its more salient manifestations. The Industrial instinct is more rare, and is less obvious. Yet it is sufficiently prevalent throughout the animal kingdom to be incorporated into the biological treatment of the subject. True, it is only in the human race that it is fully developed. But the same thing really may be said of the Military instinct. In no other race does War result in permanent conquest, even of an individual kind. The constructive instinct, like the Social, has been too much limited to a few exceptional species, which would seem to be dispersed arbitrarily through the animal kingdom. But in one form or other it should exist in every case where the instincts of preservation, especially the maternal instinct, render special operations necessary. The meaning hitherto attached to it has been too restricted. It should include every sort of tendency leading in the direction of amelioration of condition; and such tendencies must very often be estimated quite apart from actual results, most of the constructive animals being much hampered in their efforts, principally by man's interference. This confusion as to the function has led to a serious error with regard to the seat of the organ, which has been placed by Gall in proximity to the organs of intellect. With the military instinct he was more successful. In the subjective theory here presented, both would be placed in the posterior cerebral region; the organ of the military instinct behind that of the industrial. All essential conditions appear to me to combine in ranging them, the first by the side of, the second above, the maternal instinct.

Having fixed the arrangement and position of the five egoistic instincts, it becomes easy to extend the series to those intermediate propensities which lead us ultimately by a

Intermediate propensities. 6. Love of Praise.

7. Love of Power.

gradual transition to the social instincts. The transition consists of two affections which, though often confounded, are yet very distinct: Pride, or the love of Power; and Vanity, or the love of Approbation. Both are essentially personal, whether in their origin or in their object. But the means through which these instincts are to be gratified give them a social character, and render their tendencies far more modifiable than those which we have been just considering, not merely in the case of Man, but in that of other races. There is, however, a considerable difference between them in this respect. Vanity, as Gall very clearly perceived, is to be ranked above Pride. The facility with which it is modified by external influences is indeed so marked as to lead some thinkers very erroneously to credit it with originating the social instinct, which on the contrary it presupposes. A comprehensive glance at the animal kingdom is all that is needed to correct this elementary mistake, so mischievous in its moral consequences. In the case of Man, the distinction between these two intermediate propensities may be looked upon as the first natural origin of the division between the two social powers, which thus finds its root in the constitution of the Brain. Each of these instincts aims alike at personal ascendancy; but the one aims at it by force, the other by opinion. Pride therefore seeks positions of command; Vanity seeks the consultative influence of conviction or persuasion. Now, as I have already explained in the General View, this essentially corresponds with the permanent distinction between the temporal and spiritual powers.

As to the situations of these intermediate propensities, Gall's view requires but slight modification. Our subjective construction is now so far advanced that little hesitation can be felt with reference to inclinations so strongly marked. The more personal of the two should be placed below the other; that is to say, by the side of the industrial organ; the other and more social being situated above that organ. Thus the larger of the two affective regions ends as it begins with an organ occupying a central position. Here then we complete, both statically and dynamically, the series of the seven personal instincts common to most of the higher animals.

Social instincts; possessed by lower animals.

We have now to consider the culminating point of the affective series; the social or altruistic propensities, towards which the preceding terms of the series have been gradually

leading us. The increase in dignity and decrease in energy which have formed throughout our principle of classification, are here in full prominence. But there is a certain compensation for their inferiority of force in their natural capability for more complete development, since they can be shared by all simultaneously, not merely without antagonism, but with an increase of pleasure resulting from such community of feeling. Although, as I have already explained, it is only in our own race that this characteristic property can be fully manifested, its first appearance should be noted in Biology, as the best preparation for examining it afterwards more thoroughly in Sociology. That these higher instincts are shared by many animal species is beyond question. They exist sometimes in a higher degree of intensity than in Man; and independently of this they are not complicated with social institutions and intellectual influences. Here consequently it is that their true character can be rigorously defined, so as to leave no room for uncertainty. Without the aid afforded by the observation of animals, our feeble reasoning powers would never have been able to withstand the sophistical attempts of theology and ontology to disprove the existence of innate sympathetic instincts; and indeed they still remain unacknowledged by minds who reject the validity of this appeal.

Social Instincts the source of Unity.

The principal tendency of these higher propensities is in the direction of a complete revolution in the mode of attaining Vital Unity. In a complicated organism the harmony of the whole must always depend upon adequate subordination of all spontaneous impulses to one preponderating principle. Now such a principle may either be egoist or altruist. Hence the distinction already mentioned between the two modes of establishing the vital consensus. The second of these modes surpasses the first, as being the only one compatible with the social state. But more than this, the unity attained by it is, even from the individual aspect, more complete, more easy, and more permanent. The lower instincts derive their incentives to conduct from purely individual sources; and as these are both numerous and varied in character they are incompatible with any fixity of action, or even with any permanence of character, except during the periodic activity to which each of the stronger appetites is in turn excited. The individual must subordinate himself to an Existence outside itself in order to

find in it the source of his own stability. And this condition cannot be effectually realised except under the impulse of propensities prompting him to live for others. The being, whether man or animal, who loves nothing outside himself, and really lives for himself alone, is by that very fact condemned to pass his life in a miserable alternation of ignoble torpor and uncontrolled excitement. Evidently the principal feature of Progress in all living things is that the general consensus which we have seen to be the essential attribute of vitality should become more perfect. It follows that happiness and worth, as well in individuals as in societies, depend on adequate ascendancy of the sympathetic instincts. Thus the expression, *Live for Others*, is the simplest summary of the whole moral code of Positivism. And Biology should indicate the germ of this principle, presenting it in a form uncomplicated by disturbing influences.

None but our own race, as I have already explained, can bring this constitution of things to full maturity, by the establishment of Sociocracy as the result of a long course of probation, which for the advanced part of humanity is now complete. Still, many other races might reach a similar result by exchanging savage independence for voluntary subjection, as is the case already with those whose organisation is specially favourable to it. Thus a vast Biocracy will gradually arise; and its extension to all species susceptible of discipline will be one of the principal results of the moral and social regeneration of mankind. The affiliation of these lower races implies their possession of affections identical with those which, more highly developed, or working under more favourable conditions, lie at the root of human sociability. These nobler instincts tend therefore to become preponderant in all animals capable of subjecting themselves to Man, though such subjection has often been absurdly attributed to slavish fear.

Social Instincts: 8. Attachment; 9. Veneration; 10. Humanity.

These higher propensities are few in number: to attempt however to reduce them to one would be to fall back into the metaphysical confusion from which Gall has delivered us. He distinguished with great clearness three instincts, requiring merely a more systematic conception of their functions; Attachment, Veneration, and lastly, Goodness or universal Love, the feeling imperfectly represented by theologians under the name of Christian Charity. The natural arrangement of this group

agreeing obviously with our general principle of Classification, terminates the affective series. Like all the preceding groups, we reach it through a process of binary decomposition. The primary division of the sympathetic instincts evidently turns on the special or general character of their aim. In the first case they will be more intense but less noble. This is why they have been spoken of slightingly under the title of collective egoism; an irrational and exaggerated expression, showing a thorough misunderstanding of their essential and permanent feature, the tendency to live for others. But in this first division are comprised two propensities which, as they differ in their degree of speciality, it is important clearly to distinguish. The word Attachment, given by common consent to the first of these, is admirably chosen, indicating as it does the greater energy of the more limited affection. Its full force is only felt when it binds two individuals together. The life of the family is a sufficient and indeed is the most suitable sphere for its action. Consequently we find it highly developed among animals, and often to an even higher degree than in Man. It leads them in many cases to monogamy, reaching sometimes to the ultimate point of widowhood. The second of the two special sympathies is Veneration, properly so called. The object of this instinct is always definite, but admits of far wider scope than that of which we have been speaking. Its essential characteristic is voluntary submission. It is therefore principally manifested towards superiors, whereas the previous instinct operates between equals. We find this noble feeling in many of the animals, although less frequently than simple attachment. Some even carry it to the point of worship of the dead, as in many recorded instances of dogs and their masters. Gall, whose combative life was not favourable to the exercise of this instinct, had but a very imperfect understanding of its nature. It was more successfully handled by Spurzheim, and especially by Broussais, who crowned his noble career so honourably by the conscientious energy with which he studied and disseminated a doctrine which he had previously misunderstood. This important instinct forms a natural transition between individual Attachment and universal Love. This last is the supreme term of the affective series. It admits of many degrees, but is not divisible into any other, being characterised by the collective nature of its aim, whatever the extent of the collection. From

the love of the tribe or community to the widest patriotism, or to sympathy with all beings who can be brought to share a common life, the feeling never alters in character. Only it becomes at once weaker and more elevated as it extends more widely, following the law common to the whole affective series. Animals have it in a less degree than the other two sympathetic propensities. It should not however be looked upon as an exclusive attribute of our race, though it forms its most distinguishing characteristic. By a happy ambiguity of language the same expression is used to designate the widest exercise of this highest affection, and also the race in whom it exists to the highest degree. And as in this fullest sense it is incompatible with any feeling of hatred to other races, there is little inconvenience in using the term as the expression of the largest and most universal form of sympathy. The reader will therefore understand my motive in applying the name of Humanity, in my Table of Cerebral Functions, to the best type of vital unity, which, as the foregoing remarks will have shown, tends more and more towards dependence upon this instinct.

Before leaving the analysis of this group, which brings the Affective series to a close, I must not omit to notice its profound ethical importance. It is of course a less dangerous mistake to confound all the social sympathies in one than to ignore their existence altogether. But this vague mode of regarding them is inadequate in theory and is still more mischievous in practice. It leads indeed sometimes to most subversive consequences, as may be seen but too clearly in the present state of the human race; the advanced portion of it being led by this error into the most dangerous aberrations, both private and public. It would be out of place to develop this thought at present; I only mention it to show the great service rendered by systematic biology in demonstrating the natural source of that education of the feelings on which the whole discipline of our race depends. When studied in the animal kingdom, the separation and progression of these sympathies become evident to the most obstinate of metaphysicians. Not merely must he acknowledge the distinction in name, but also the gradation in dignity and in energy, and farther, what is extremely important, their succession in time. Building on this foundation, Sociology is the better able afterwards to show the folly and danger of tendencies which ruin the whole training of the affections, by aiming at once and

without preparation at the highest of the sympathies, instead of regarding it merely as the final term.

Localisation of Social Instincts.

As to the locality of these three instincts, Gall's solution, except for the first of them, may be left untouched. And we cannot fail to admire the remarkable insight into statical as well as dynamical relations, which he showed in the case of the last. From deficiency in systematic method, the great founder of cerebral physiology had been induced to place Attachment in close relation to the egoistic organs and away from the two other sympathetic instincts. But with the organ of Benevolence he was more successful; and from this point we may start in defining generally this superior division of the affective region. Allotting the highest median portion of the frontal division to Benevolence, Veneration, in accordance with Gall's view as rectified by Spurzheim, should be placed immediately behind it. But between these two and the highest of the personal instincts I should leave an interval, to be occupied, as I shall state afterwards, by one of the three practical organs. Attachment I would place laterally to Veneration. Its organ sloping from before backwards connects itself below with that of the Love of Approbation; and in this way it maintains the continuity of the affective region, notwithstanding the break in the median line. When I come to speak of the active region it will be readily seen that this exceptional arrangement is required by the general plan of this subjective theory. It brings the noblest part of the affective region into special prominence. The general superiority which Gall rightly attributed to median over lateral organs serves as an additional illustration of the higher quality of this social region. It has two median and one lateral organ, while the personal region has four lateral and three median. Moreover this highest part of the affective region, which is in direct proximity to the speculative region, will have fewer points of contact than any other part, either with the motor apparatus, or with the vegetal viscera. Its nearness however to the intellectual organs does not involve its sharing their intermittence, since it is not brought into contact with the outer world. The perpetuity of function, which I have mentioned as a property of the whole affective region, extends to the social organs, at least in the proportion of their energy. When sufficiently developed, their activity will naturally be

constant, alternating between each symmetric organ in all those races which rise to social or even to domestic life.

Classification of characters in accordance with predominant propensities.

This concludes the first of the three divisions of my cerebral theory. An important application is suggested by it, which though it can only be studied properly in Sociology, yet, being common to Man with the lower animals, should be briefly indicated here.

Gall deduced from his whole scheme a remarkable though somewhat vague classification of human character which Broussais subsequently developed. But as his classification of the affective functions was defective, and his conception of the intellectual functions altogether erroneous, the attempt was necessarily a failure, except as indicating one of the most valuable consequences of a sound cerebral theory. As, however, correct classification is the most useful feature of the cerebral theory here put forward, I shall add a few remarks upon this natural application of it. It will be simpler to confine it in the first instance to the affective region; and this is why I speak of it here. Practically, the classification of the various types of a species must depend mainly on the nature of the impulses which habitually govern action, irrespectively of intellectual faculties, which Gall was wrong in mixing up with them. Besides, even supposing that such classification were intended solely for the human race, it would still be a mistake to base it, as Gall did, upon any absolute distinction between humanity and animality; the radical identity of which under every aspect, subject to differences of degree, we have just verified.

With these remarks we may now review this whole group of elementary propensities; five purely personal, three purely social, and two intermediate, that is to say, personal in aim and origin, social in their modes of action. Their statical distribution represents their dynamical relations, and may thus be useful as the logical equivalent of these. The first glance at this great series of affections, common to all the more important species, suggests a natural classification of the various types in each race, according as one or other order of propensities may govern its action. And it may be accepted with the more confidence that it simply results in giving a systematic form to the practical judgment of men, which on such a subject is of undoubted competence. We have here in the first place the general distinction between good and bad, including all who are

under the dominion of strongly marked egoistic or altruistic instincts. But the numbers who can be definitely ranged in either of these two extreme classes are always small, nor are they equal; the proportion in which they stand to each other determining our opinion of the character of the race. In all races the large majority, greater in some, in others less, oscillates between these two principal types without displaying any well marked tendency. A third type however may be noticed, in which the two intermediate propensities are predominant. This class is not uncommon among the social races, most of the leaders belonging to it. Among mankind it aims either at power or at influence, according as the more social or the more personal of these two equivocal instincts is the stronger.

Such then would be the classification of a species, so far as relates to this most important of the three cerebral regions. It may be carried to any extent that may be practically required by examining each class of affections more closely, as illustrated in the case of the intermediate instincts. I have confined the examination to feelings, with the view of rendering the result more intelligible and more susceptible of application. But though a nature may be defined by the qualities of the heart, it must remain undeveloped unless the mind and the character supply the requisite means of action. Deficient capacity, theoretical or practical, may sometimes conceal the quality of the affective type. But careful examination will always reveal its true nature, whether in animals or in men.

Intellectual functions, pp. 571–584.

The most essential portion of my cerebral theory is now completed. The two portions that remain will require less time and labour. I deal first with the speculative region, the function of which is to find the means of satisfying the various desires; and secondly with the active region, which directs the execution of projects when thus formed.

Defects of Gall's view due to absence of sociological theory.

With regard to the intellectual functions I differ from Gall almost as widely as he differed from his metaphysical predecessors. So wide indeed is my disagreement, that, by dispensing me from much special discussion, it simplifies my exposition of the subject. It will be necessary however to explain in a few words the faulty nature of Gall's mode of procedure and its contrast with that suggested by sociological principles. A brief statement of our principal differences will

sufficiently indicate the general spirit of my own doctrine, which will then require but few details to render it clearly intelligible.

In the absence of all systematic method, Gall constantly oscillated between the suggestions of his own mind and empirical observation, without ever proceeding on any regular plan. This fluctuation however, which then was inevitable, did not seriously interfere with the first attempt to work out the physiology of the brain so far as the propensities were concerned. Here his logical deficiencies were compensated by a powerful combination of two most efficient instruments: the common sense of mankind, and the observation of animals. In this subject no one had gone utterly astray except the philosophers, whose endless points of discord had done little except hide the truth. In this part of the subject Gall's success was due rather to vigour of character than to intellectual superiority; as I have before remarked was the case with Kepler in the discovery of his second law. When once he had broken entirely loose from the metaphysical delusions as to the sovereignty of mind, popular instinct soon led him to see that in actual life the Heart was the principal arbiter. To examine its preponderance more thoroughly he was thus induced to employ the method of observation of animals, where there are no mental influences and social institutions to complicate it. Consequently his special remarks on the various propensities are for the most part extremely judicious. The alterations and eliminations which I have found necessary are few and of secondary importance. All that was left for me to do was the important work of studying the affections as a whole, so as to form them into a progressive series; a task which Gall had not even attempted. With this exception, the result of my own examination has been to adopt all his principal conceptions, statical as well as dynamical.

But with the intellectual functions the case was altogether different. Here Gall was not helped by the study of the lower animals; and the light derived from the common judgment of men was too confused, and needed the application of a theory beyond his grasp. Notwithstanding this, he burst vigorously through the oppressive confusion of metaphysical prejudice. His own conclusions were indeed shallow and in every respect unworthy of him; still, ephemeral as they were, there was sufficient reality in them to assist me in ascending to the true encyclopædic point of view by founding the science of social

life. Only from this higher level is it possible to discover the true laws regulating the nature and working of the intellectual functions. Abandoning as useless the self-inspecting process, we subordinate all theories of mind to the positive study of the collective evolution of the race; because it is only here that mental phenomena can display their real character. This then is the source of the very serious differences between Gall and myself on this great subject; a subject impossible to investigate adequately till the completion of my philosophical treatise.

His multiplication of distinctions; and misapprehension of the Senses.

It would be superfluous to dwell on any special mistakes of Gall in this part of the subject. Avoiding the confusion hitherto caused by faulty generalisation, his want of a true encyclopædic theory led him to multiply distinctions too much, often most frivolously. Aiming blindly at reality, his analysis became empirical and incoherent. Again, in his resistance to the exaggerated ideas of metaphysical writers as to the subjection of the intellect to the external senses, Gall went to the opposite extreme of narrowing their proper field, and of attributing the principal facts of sight and hearing to special cerebral organs. Without dwelling further however on these special criticisms, I pass to his more excusable and less recognised errors with regard to the general phenomena of intelligence.

His erroneous view of Memory and Imagination.

In Gall's immortal disquisition upon the doctrines of the psychologists and the ideologists, only the negative part is really satisfactory. The utter futility of their explanations of logical processes, their vague mode of regarding such faculties as Attention, Memory, Will, &c. as elementary attributes, he clearly demonstrated. But the conception which he proposed to substitute for these learned puerilities was by no means so successful. He represented these general phenomena as so many modes of action common to all true cerebral functions, affective as well as intellectual. His theory has met with little acceptance, and this is of itself a presumption against it; since in the present emancipated condition of thought such failure cannot always be attributed to routine. Still it is only by the light of Sociology that it can be judged, and that a substitute can be found for it without recurring to the old errors. Before announcing my own theory of the elementary intellectual functions, it may be well to premise my view of their general processes. I regard them neither as special faculties, nor as

modes of being common to all the organs, but as results of the various mental functions in combined action.

The true view of these processes. They are composite intellectual results.

My first position is that they belong exclusively to the intellectual organs. I cannot adopt Gall's view, even as amended by Spurzheim, that they are properties of the affective organs also. Not only can these latter organs not be credited with Memory, Judgment, nor Imagination; but even Sensation, in the strict sense of that word, must be denied them, in spite of their high degree of sensibility. The practical wisdom of mankind has long ago spoken, and very justly, of all propensities as blind. To feel and to desire are the peculiar and sole functions of these organs; whether in the active or the passive state. Their nature consequently consists in emotions, resulting in impulses; but not admitting of cognition; not, therefore, of judgment. In their highest degree of activity, even when exalted by disease, they are wholly unconscious of their own condition. It can only be taken cognisance of by the intellectual organs, supposing that these are not too much preoccupied to perceive this internal process as though it were an external object. Gall's view would make it inexplicable that for a long time the propensities were believed, however erroneously, to have their seat in the vegetal viscera, which evidently can have nothing to do with cognition. And if cognition and judgment are denied to the affective organs, they cannot be endowed with Memory or with Imagination. All appearances to the contrary spring from their necessary reaction upon the intellectual region, the operations of which they direct and stimulate. The limitation of their action is verified only too clearly and too painfully in cases where we are unable to recall former emotions, however deep, in spite of the keenest desire to do so, unless they have left some trace by which the intellect can recall the necessary images and signs. Of all the supposed attributes of Intellect attributed by Gall to the affective organs, he was right only in one, the Will: and this indeed he ought to have referred to them exclusively. Will, properly speaking, is nothing but the ultimate condition of Desire, when, after the deliberative mental process, the appropriateness of some dominant impulse has been recognised. It is quite true that the intellectual organs have also their special desires, due in their case, as in every other, to the necessity for activity; in accordance with the first law of Animal Life. But the energy of these is too

slight ever to result in what can truly be called a Will, capable of determining conduct. Conduct is invariably suggested by the affective impulses.

Memory and Imagination then, as well as Cognition and Judgment, are, as had been always supposed, attributes of the pure intellect. But as they are not functions common to the whole brain, so neither are they special functions. They are composite results, due to the combined action of the elementary intellectual functions hereafter defined.

Even Judgment is composite.

All positive studies, spontaneous or systematic, show the utter futility of the distinction ordinarily made between Observation and Judgment. The mind's internal operations are in every case a direct or indirect prolongation of external impressions, and conversely, the latter, even in the simplest instances, are always complicated by the former. Every one of our beliefs, as Kant saw very clearly, is at the same time subjective and objective; involving both an active and a passive condition of the mind. The real bearing of this great logical conception is an extension to intellectual operations of the fundamental principle of Biology, the correspondence of organism and environment common to every vital phenomenon. Poets, and with them the public, of whose instincts they are the best interpreters, have been far before philosophers in recognising the truth that in the most commonplace perceptions of external fact, there is often a most intricate combination of the faculties of observation and reasoning, so vainly dissevered by metaphysical analysis. One reflection, easily verified, would be enough to prove the reality of this combination. Cognition is never effective until the outward impression corresponding to it has been repeated sufficiently often. Now it is only in the first perception that the mind can be purely passive. By the time the second comes, the mind is already prepared for it, and associates it with all its previous store of cognitions. And even at starting there is never that isolation of the contemplative faculties imagined by metaphysical writers, who entirely neglect the principal source of intellectual activity, the reaction of the heart on the mind. The admirable work of Cervantes is a profound illustration of the mode in which emotion modifies sensation. Here the writer has anticipated every biologist in sketching the true theory of insanity. The skilful exaggeration of his pictures represents very clearly the normal state for those who know how

to use Broussais's fundamental principle of the general relation of Disease to Health. Between the systematic field of positive science and the spontaneous field of common sense there is no sharp line of demarcation. The first being only a prolongation for special purposes of the second, it offers a clearer because more highly developed example of the ordinary mental process. And it consists invariably, as I have so often remarked, in constructing the best hypothesis capable of representing the observed phenomena. This universal principle of positive Logic is constantly and spontaneously put in practice in the business of common life, from which all our scientific theories in the first instance emanate. The simplest judgment as to an external fact may be put into the form of a scientific problem, in which the mind endeavours to produce a conception that shall harmonise with the total sum of impressions received from without. The less distinct these impressions are, the greater is the effort of the mind to substitute its own combinations, which often are very subtle and far-fetched. When there is a strong desire for a decision, and yet no external facts sufficient to justify it, it is sometimes founded on purely internal reasons, due simply to a strong reaction of the Heart upon the Intellect. Situated as the mind is between impressions from without and impulses from within, it has no choice but to decide upon these latter grounds when the former are wanting, unless indeed it abstain from a verdict altogether; and this is often impossible. This condition of the reasoning faculties, in which the Intellect is not merely the servant of the Heart, but in the truest sense its slave, is often realised in animals. Not in them exclusively, however. We find it in Man, even when not insane. It was the normal condition, as will be subsequently explained, during the long infancy of the human race, when theological beliefs prevailed.

I have dwelt somewhat fully on the constant participation of the reasoning faculties in processes attributed to mere sensation. It will not be necessary to go over the same ground with regard to Memory, and still less with regard to Imagination. These are evidently operations of a more difficult kind; it is therefore even less possible to look at them as true elementary functions, either special or common to all the cerebral organs. To recall an internal impression requires in many cases an intellectual effort of the same kind as to discover an external

fact ; an effort consisting in a series of inductions and deductions based on mutual relations. The only spontaneous part of the process is the tendency of impressions to reproduce themselves, in accordance with the second law of animality. But there is a wide difference between this general phenomenon of animal life and Memory, properly so called, which is always an intellectual operation. Still more evident is the association of all the speculative faculties in the case of Imagination. Its pictures presuppose very often combinations less abstract indeed, but not less profound, than those of the scientific thinker. Philosophers are already agreed as to the futility of a classification of intellectual products based on these so-called faculties ; and they are equally useless for classifying individuals. Both these facts show them to be composite results of all the mental functions combined. Gall's well-known arguments founded on special memories are more specious than sound. A more searching analysis will always show that the so-called speciality depends on differences of surroundings and of antecedents, combined merely with individual variations in the vigour of the lower functions. The only faculty that is really special, either in the case of Memory or of Imagination, is that of Language, as will be explained afterwards.

The foregoing remarks will have already removed the principal difficulty attending the explanation of my own theory of Mind. The five elementary functions, and consequently the five organs of intellect which I propose, will be readily apprehended by the reader who starts with the principle that human knowledge consists simply of facts and of laws ; that is to say, of phenomena either special or general.

These irreducible operations must be abstract in their nature, so as to apply indifferently to all the varied products of the Intellect. For its working is in all essential respects ever the same, whether in practical combinations or in theoretical compositions, scientific and æsthetic. This has been clearly pointed out by a remarkable writer, Sophie Germain, in a posthumous work deserving more attention than it has received. The identity which necessarily obtains in intellectual operations is of itself enough to show the irrationality of the special distinctions which writers on cerebral physiology have hitherto accepted.

Intellectual functions. Distinction of Conception from Expression.

The first distinction in mental functions is that between the faculties of Conception and the faculties of Expression. The latter are indeed in the healthy state always subordinate to the former. But there is every ground for believing that they are distinct, and therefore require a special organ.

Expression presupposes Conception. But it is not the less indispensable as the completion of the conceptive process; not merely to transmit the result to the Society or Family, but as evidence that the conception is mature, and as a mode of improving it. Spontaneous evidence of this close connection is furnished in the fact that all Western languages designate the reasoning process by a term which, if traced back to its Greek root, would express simply Speech. Conversely, in Italian, the word *Ragionare* is used of mere Exposition, be it even the simplest statement of fact.

But associated as these functions are, they are distinct and must not be confounded. In diseased states they are often separated, the one being exalted, the other lowered. During infancy language is developed before reasoning; so that instruction always begins by mere formulas, leaving the meaning to be learnt afterwards, or not at all. Even in the mature state this plan is not altogether dispensed with. And besides this there is a phenomenon of frequent occurrence, though but little noticed, which illustrates the distinction between these two cerebral operations by their difference of rapidity. I have often remarked, while engaged in composition, that expression in certain cases anticipates conception to an extent of two or three sentences, so that I have been able to form actual previsions as to the time and manner in which the two would finally coincide. Again, comparing different individuals, and also different races of animals, we see clearly that the two kinds of faculty by no means always correspond. Even when the contrast is only observable in instruction communicated from others, not extending to spontaneous production, the proof is not less clear; since learning and discovering are the result of similar operations, differing only in degree. We may therefore completely endorse Gall's opinion as to the necessity for a special organ of Language, not merely in the human race, but in all the higher animals. The degree in the zoological scale at which complete separation of the sexes begins would naturally mark the commencement of this cerebral function, which

now becomes more or less requisite for maintaining the relations necessary for reproduction.

Conception divided into contemplation and meditation.

When these relations are feeble and transient, it is probable that the brain possesses only two speculative organs, one for Conception, the other for Expression, in addition to the ordinary ganglia of external sensation. But when we reach the point at which the young are educated, and the true domestic state, and very often something like the social state, is formed, there arises necessarily a more complicated arrangement. The higher of the two functions is divided, although the other remains always simple, even in our own race.

At and above this point, in fact, we find two sorts of conception—one passive, the other active—adjusted to each other, but still fundamentally distinct. The first of these in Man may be called Contemplation; the second, Meditation. By the one the Mind receives from without the original material for its constructions, through the medium of the perceptive functions performed by the sensory ganglia. It then proceeds by the other to form combinations of a more or less general kind with the view of guiding conduct. *Ideas*, properly so called, that is to say, Images, are the result of Contemplation; whereas Meditation produces only *Thoughts*. In spite of theological and metaphysical prejudices which exalt these faculties into an exclusive privilege of our own race, both undoubtedly exist, in various degrees of inferiority, throughout the higher part of the animal kingdom. For with animals as with ourselves they are more or less necessary for personal, domestic, and above all for social life; and this for herbivorous as well as for carnivorous races. Necessities of nutrition, sexual relations, attention to offspring, are constantly calling out observations and reflections, which we in our stupid conceit fail to perceive. In all these daily experiences animals frequently exhibit higher inventive power than the writers who disdain them on the strength of an intellectual training, which, as the great Molière said, usually consists in knowing what other people have said before them. It is not merely in affection and in courage, but also in sagacity and foresight, that the unfortunate fox shows himself often superior to the crew of aristocrats who chase him.

To bring our statical conception as before up to the level of our dynamical analysis, it will be enough to remark that the contemplative function should be placed in the lower portion of

the frontal region, leaving the higher portion for Meditation. The first ground for this is the importance of bringing the sensory organs into as close connection as possible with that cerebral function which alone is directly concerned with their operations. A further motive is the desirability of placing as near as possible to the affective region that intellectual organ which, when supplied with information from without, passes the final decision upon the impulses proceeding from the various propensities. These two subjective considerations, both pointing in the same direction, seem to remove all doubt as to the general probability of the decision.

In this second analysis of Mind, what was originally presented as a Combination, consisting of Conception and Expression, is now presented as a Series; and the natural process of thought passing from Contemplation to Meditation, and thence to Communication, is thus rendered more intelligible. Even yet however, we have not reached the limit beyond which further reduction is impossible. The faculties of Contemplation and Meditation may both be decomposed; this of course involving corresponding division of their organs. It need not be remarked that this final division, like all the preceding, must follow the general principle of classification; that is, must be based on increasing speciality and decreasing importance.

Two organs of contemplation. 11. Concrete and synthetic; 12. Abstract and analytic.

Proceeding on this double principle, we find, in the first place, two modes of Contemplation. The essential character of the first is to be Synthetic; it refers to Objects. It deals therefore with the Concrete aspect of things. The second on the contrary is Analytic; it takes cognisance of Events. Its nature is therefore abstract. From the first we derive cognitions which are real, but special; from the second we get conceptions which are general, but more or less factitious. The latter kind of Contemplation is more used in Science; the former in Art, whether technical or æsthetic; the difference, however, not being such as to interfere with the essential identity of the intellectual process in both. Here then we have the biological confirmation of a principle laid down in the first chapter of this Introduction; the coincidence, philosophically, of the antitheses between Concrete and Abstract, and between Practice and Theory. In the subdivision of the lower part of the frontal cerebral region we shall find an anatomical confirmation of both these contrasts.

The motive for this subdivision becomes evident when we reflect that concrete observation differs from abstract observation in being more intimately connected with external impressions. Not that the latter is disconnected from them, but that it often deals with them indirectly; operating not on the impressions themselves, but on the images of them furnished by the concrete faculty. For every true Image represents not a mere phenomenon, but an Object of some kind. Consequently Ideas properly so called emanate from concrete Contemplation only. The organ of Abstract Observation therefore should be in close relation with the concrete organ, and less immediately in contact with the external senses. We place it therefore in the median line, strengthening thus at the same time the correlation of its two symmetrical halves. Concrete Contemplation on the contrary will have a lateral organ, each half of which will be situated in the region above the eye, and reaching in the direction of the ear.

Two organs of Meditation. 13. Inductive; 14. Deductive.

The proper mode of decomposing the Meditative function will commend itself to all true thinkers who clearly understand the positive distinction between Induction and Deduction. It is clear that the act of Meditating can be performed in two very distinct ways: that is to say, either by laying down principles, or by deducing consequences. The first is the process of comparing: the second of co-ordinating. The former ends in Generalisation; the second in Systematisation. The distinction is apparent in every complete Classification; the first process of which is to apprehend the relations enabling us to form groups: the second to arrange these groups in hierarchical succession. Again, taking a still wider field, we find Inductive meditation more concerned with relations of Similitude, that is to say, with statical relations; Deductive meditation with relations of Succession; that is, with dynamical relations. Thus the cerebral function which discovers Laws is subdivided as clearly as that which observes Facts.

Consequently, Deductive reasoning, as the more elevated and more purely internal process, and at the same time less indispensable and less direct, should have a median organ, situated in the higher part of the frontal region. On it, more than on any other, depends our power of Prevision; and this is a reason for bringing it into close contact with that one of the nobler propensities which it is its highest purpose to satisfy.

Evidently the organ which co-ordinates should lie close to the instinct which binds together. The organ of Inductive Logic would be lateral, and thus in more direct relation with that one of the organs of observation which supplies the greater part of its data.

Such then is the subjective arrangement, statical and dynamical, of the cerebral region devoted to Conception. The result of two corresponding analyses has been to show that the great speculative function consists of four successive operations, emanating from four organs, lateral or median: the observation of Objects; the observation of Events; the elaboration of Principles; the elaboration of Consequences. In this general description of the procedure of scientific thought, we have a perfectly regular progression, ending in systematic prevision capable of guiding wise intervention. I have not shown the applicability of our last decomposition to the case of the lower animals. But there can be no doubt of its reality in all cases where we find the calculated activity which it is the one object of this cerebral apparatus to facilitate. A man must be under the fascination of theological or ontological belief, to deny the existence in the animal kingdom of deductive capacity without which their ordinary life could not be carried on. I may remark that the general principles of the subjective theory here stated suggest themselves so naturally, that we see them to a certain extent underlying, both statically and dynamically, the empirical analysis with which Gall and Spurzheim introduce their confused description of the intellectual region.

15. Organ of Expression.

To complete the speculative series, we have now to examine the function with which it necessarily terminates, at least in social and domestic life. In the lower species, where life never rises above individualism, expression consists simply in the vital acts themselves; these forming an involuntary record of the impulses from which they emanate. In all cases, however, of concerted action between individuals, a more distinct and direct transmission of feelings and of thoughts is necessary. Before acting, each has to make it clear what his emotions or his projects are, so that he may obtain the sympathy and support of his fellows. The first effort stimulated by the cerebral organ of these communications consists simply in an imitation of the natural signs suggested by the ordinary performance of each function. When the relations between them are too numerous

and intricate for this method, a language of a more or less artificial kind is added, the first elements of which consist in isolated fragments of the animal's spontaneous cries or gestures. In the social races, and especially in our own, this institution extends and becomes consolidated in proportion as the range of ideas and relations widens. Language becomes thus the accumulating store of the wisdom of the race. The transmission of it from parents to offspring is always, even with mankind, the most precious part of their inheritance; and is the first foundation for future training.

All voluntary movements may serve for language; the cerebral organ being the same whatever the instruments employed. In the simpler relations of life, the easiest and least equivocal means of expression are chosen; those directly connected with the actions or passions. But very soon we find in all the higher animals vocal sounds becoming the principal basis for the institution of signs. In addition to the more obvious and well-known reasons for this choice, there is one reason which has escaped notice, but which has much to do with its universal acceptance. I refer to the spontaneous adaptation of the Voice to the sense of Hearing, which, by allowing the individual to talk to himself, enables him to develop in a most direct manner his own education. Mimic expression is in this respect altogether inferior to Oral; the latter, consequently, is far more susceptible of continuous development.

The principal object of either mode is of course to facilitate mutual relations. But they are of use also, personally, both as a means of exercising the corresponding muscles, and also for solitary expansion of feeling. Many of the higher races are conscious that expression reacts on the passions that it communicates. Song and dramatic action, or rather cries and gestures, are employed often by them as by us, not merely to soothe, but to stimulate passion. Anger is excited thus in all carnivorous animals.

Expression is always an intellectual function, but more closely connected than any other with the affective and also with the active functions, so that every aspect of life is well represented by it. In itself, however, it is limited to the task of learning and inventing signs. To form what can truly be called a language, this fifth mental function must be properly subordinated to the other four, which control or direct its working.

Failing such adjustment, this supplementary organ produces nothing but empty verbiage; it cannot form true speech capable of communicating feeling, developing thought, and assisting action. This function must in the first place be brought into special relation with both parts of the contemplative apparatus, to which it supplies respectively names of Things and names of Qualities. Then it has to deal with the material supplied by both parts of the meditative region, that is to say, with instruments of comparison and processes of co-ordination. Language, properly so called, requires then the combination of all the intellectual functions, in addition to the activity of its own organ, which can simply initiate signs, without having any power to judge of their value. This explains those cases of disease in which speech is affected, but only in certain of its grammatical elements, and makes it unnecessary to suppose that different classes of words have each their special organ.

Our previous localisations leave only one place unoccupied for this fifth intellectual organ, namely, the lateral extremity of the speculative region: the remainder being already filled by the contemplative and meditative organs, with the exception of the space previously allotted to the sensitive ganglia. It would commence therefore at the middle of the anterior margin of the frontal region, and extend in the direction of the temple; occupying very nearly the space given by Gall to the constructive instinct. And this indirect solution may be supported on subjective grounds; the position assigned to this organ being midway between the eye and the ear, its principal auxiliaries. It is, moreover, approximated to the active region, with which it is intended specially to co-operate, as the only link connecting it with the speculative region.

Active functions. 16. Courage; 17. Caution; 18. Firmness.

We may now pass from this second branch of the cerebral theory to the third and concluding section, that of the practical functions. Two aspects of moral life have been now clearly defined: the impulsive principle, emanating from the Heart; the consultative instrument, belonging exclusively to the Intellect. To complete our positive analysis of the Soul, we have then only to examine more closely the Character, properly so called; that which finally realises the result of desire and calculation.

These practical faculties are so clearly defined that their dynamical analysis can offer little difficulty to the biologist,

who sees them uncomplicated with intellectual or social influences. Every being endowed with active powers should have Courage in undertaking, Prudence in execution, Firmness in accomplishment. No practical success can be attained without the union of these three qualities. And conversely, their combined action, circumstances being sufficiently favourable, ensures the realisation of every project well inspired and wisely planned. Each of these attributes is in itself as independent of the heart, properly so called, as of the intellect, although its practical efficiency depends materially upon both. Their action, separately considered, is essentially blind; equally inclined, that is, to forward all designs, whether bad or good, under the impetus of a sufficiently strong desire. And thus it is that we find many animals superior to us in energy, in circumspection, or in perseverance, sometimes, perhaps, even in the combination of these qualities; and yet not able to utilise them as Man is enabled to do by his moral and intellectual superiority, especially when developed socially.

These dynamical considerations render it easy to fix the position of the organs. In a question so uncomplicated, the natural sagacity of the founder of cerebral physiology was sure to avoid any serious mistakes, even with his empirical procedure. He showed great judgment in assigning a median organ to Perseverance, situated behind that of Veneration, and in front of that which in my theory is appropriated to the highest of the personal propensities. By its side is the organ of Caution, bending forwards towards the intellectual region, and at its commencement crossing the organ of Attachment which extends in the opposite direction. The study of the functions of this organ is a point in which Spurzheim was more successful than Gall. With regard to Courage their joint opinion requires some modification. Its situation in the present plan is slightly more elevated, being placed at the side of the organ appropriated to Vanity. The reader who has followed the previous description will at once see that these three statical solutions follow necessarily from the preceding, there being no other places available. But even had this not been the case, the direct use of the subjective method would have led me to the same result. The localisation here suggested renders the active region conterminous at once with the affective and with the speculative region; as is required by its function, which is

associated alike with Desire and with Thought. Further, it was necessary to place these three organs midway between the three classes of propensities, superior, middle, and inferior, by the impulses from which they are successively influenced.

This last class of cerebral functions stands out too clearly in the life of every animal to need more detailed examination in this place. We have first the combination of Activity, in which work of every kind originates, with Persistence, which ensures its success. But we soon see that the former of these is composed of two distinct forces, the first of which stimulates, the latter checks. Here then we have a regular progression, presenting a distinct picture of active life in its three successive phases. Thus the positive Treatise of the soul concludes with the simplest and most perfect type of a true vital series, formed by the normal process of transforming a binary combination into a ternary progression. And this series of the active functions is quite in keeping with the general principle of co-ordination previously followed in the affective and in the speculative series. For the decrease in generality and the increase in dignity are obvious in the transition from Courage to Prudence, from Prudence to Perseverance; and this whether we compare different animal species or confine our consideration to Man. And as in the other two parts of my cerebral theory, the dynamical gradation is naturally and accurately represented statically by the arrangement of the corresponding organs, the more noble and more special occupying always an anterior or superior position.

Consensus of Cerebral organs.

This concludes my subjective theory of the brain. I subjoin a Table (see Appendix) presenting it in a systematic and synoptical form, which, as I have observed at the outset of this disquisition, was the shape in which the theory was in the first instance sketched out.

Its profoundly synthetic character renders it needless to dwell on the intimate connection of its various parts, none of which should ever be viewed independently. The founder of cerebral physiology had already felt and insisted on this solidarity of the whole, although from the irrational nature of his procedure he held too loosely to the principle. The principal characteristic of Life, as the great Hippocrates and all after him have recognised, is the general consensus of parts. And such consensus should be specially apparent in the apparatus spe-

cially destined to maintain it elsewhere. In no other system are the organs so homogeneous or brought into such close contact; precisely as might be expected from the greater affinity of their respective functions. Although each of these eighteen cerebral forces is susceptible of isolated activity, yet practically in most actions several faculties act in combination. The general harmony which I first indicated between the affective, speculative, and active regions, is now borne out by our special analysis of each.

Nor is there much disposition to deny this harmony, except in the case of intellectual functions which the pride of learning would endeavour to isolate from the rest. But the very source of this error, an error alike subversive and retrograde, affords involuntary evidence of the dependence which it seeks to deny. The subsequent portions of this treatise will demonstrate more and more clearly the fundamental truth laid down already in the General View: that the Intellect has simply to choose between two kinds of masters, the personal or the social propensities. When it imagines itself free, it is simply under the dominion of egotism; the influence of which, being stronger and more habitual than that of altruism, is more spontaneous and unconscious. And not only is the general direction of intellectual effort determined by a moral impulse, but each detail of the process is affected by it, as Broussais had seen clearly even before he had adopted Gall's doctrine. The simplest act of attention depends always upon some kind of affection; and in meditation properly so called this is even more indispensable. Events of immense import may take place, as for instance in the heavens, without attracting the notice of any living thing, even of Man, provided they present no relation, direct or indirect, with his real life. Every one on the other hand is profoundly stirred by any event which appears to disturb the natural order regulating daily conduct. The dependence, again, of Intellect on Character is not less than on the Heart. Courage, Prudence, and Perseverance are as indispensable, though in different ways, to the man of pure thought as to the man of action. In Sociology I shall have frequent occasions of showing that intellectual failure is in almost all cases due to an unsettled state of the affections, or to feebleness of character, even more than to mental insufficiency. For those who recognise the good or evil effects upon thought of the purely

vegetal functions, it would be strange if the speculative region of the brain could ever be regarded as independent of the other two regions.

Relations of Brain with organs of animal and vegetal life.

Nevertheless, although this cerebral *Synergy* is more complete and more important than any other, it will not be right to give to it the exclusive consideration accorded by Gall. The subjective theory here proposed, instead of isolating the Brain from the rest of the Organism, aims at a clearer specification of its undoubted relations to the various apparatus, in addition to the reciprocal influence conveyed by the vascular system. The speculative and the active regions keep up direct communications respectively with the sensitive and the motor organs. In the nature of these relations there is nothing fortuitous. They explain, upon my theory, the fact of intermittence which characterises these two orders of cerebral functions. Connected thus with the outer world which it is their office either to examine or to modify, Intelligence and Activity participate necessarily in the periodic changes experienced by the external apparatus of animal life. Feeling, on the other hand, the central principle of life and the sole source of consensus, has no organs but such as are purely internal, if we except the direct action exercised in exceptional cases upon the principal muscles. Hence the perpetuity characteristic of this portion of the brain, which thus establishes the general continuity of cerebral life, notwithstanding the intermittence of the other psychic functions. By virtue of this property affective life is brought into relation with vegetal life, conformably with the paramount importance of both. Accordingly, the new theory of the Brain takes account of these relations; assuming that the nerves of nutrition, the natural channels of this reciprocal influence, terminate in the instinctive region. With these three kinds of relations with the rest of the organism, combined with the mutual connections of the three divisions of the cerebral apparatus, all the essential conditions of the problem seem to be met by the subjective theory here proposed. It need not therefore detain us further at present.

History of the growth of this Theory.

At an early period of my philosophical meditations I had a profound sense both of the importance and the imperfection of Gall's work in science, as of Condorcet's in history. For thirty years I have never ceased to labour at the recasting of both. It was long, however, before I understood the bearing of one upon

the other. It had not become sufficiently clear to me even in 1837, when I wrote the chapter in the Positive Philosophy which treats of cerebral physiology. With the completion of that treatise, which entirely realised Condorcet's design, I became for the first time distinctly aware of the true relation which it bore to the attempt of the second of my precursors, who had failed almost as completely, though in a different way. When I had laid the foundations of Sociology, I saw at last that Gall, with all his genius, could not construct the true physiology of the brain for want of knowing the laws of social development which alone could supply the proper starting-point and aim. I then saw that this work, which I had hitherto been expecting from biologists, must be reserved for the latter part of my own philosophical career. And I soon found that it must be executed before I could proceed with the present Treatise, which had already been announced on several occasions as intended to systematise universal science. Towards the end of 1846 I began my difficult task by sketching out the tabular statement, which has only been altered since in secondary details, so as to distinguish what belonged to Biology from what was suggested by Sociology. From that time I always hoped to succeed in establishing my subjective theory of the Brain as soon as in the regular course of my work I had reached the part of this Treatise where it would properly be placed. I feel confident now that the hope is realised, sufficiently at least for my own purposes, and profitably also for all thinkers who place themselves at the same encyclopædic point of view, after fulfilling the requisite conditions.

Statical conclusions much more uncertain than the dynamical.

Throughout the construction of this theory, I have endeavoured to keep within the limits of positivity assigned to the Subjective Method, as I conceive it. Consequently the statical side of my theory is less precise, and will moreover carry less conviction, than the dynamical side from which it emanates. In this first phase of its growth any graphical delineation of it would be out of place; since the form and size of each organ are still indeterminate. But the exclusion of figures is not, I think, a serious disadvantage. Indeed, by discouraging charlatanism and mediocrity, it tends to restrict the study of this question to thinkers capable of prosecuting it without such deceptive aid. It is now for those anatomists who are prepared to abandon systematically their arbitrary methods of dis-

section to test my solutions and demonstrations *à posteriori*, and to show the real and separate existence of the eighteen elements of the cerebral apparatus which I have arrived at *à priori*. The proof appears to me to be at present as far advanced as is compatible with the method employed; and by no other method could the introduction of the theory have been effected. With regard to these organs, I have simply endeavoured to fix their position, availing myself of the principle which has long been accepted in anatomical philosophy as the best basis for any statical hypothesis. I am not apprehensive that the result of further investigation will be to introduce any very serious change in the localisation here proposed. Still, in this subject as in every other, there can be no real demonstration until the results of the subjective and of the objective methods shall sufficiently coincide. In the present instance it was necessary that the ground should be opened by the first of these methods. I have now to wait until sufficient use has been made of the other, not being myself in a position to employ it. Too much importance must not, however, be attached to the anatomical aspect of the question. The structure of the liver is now known with the most minute exactness, but its function as an organ of vegetal life is very nearly as obscure as ever. Taking all things into consideration, we are more advanced in the investigation of the Brain, notwithstanding our extreme ignorance of its special anatomy.

The essential object which I have had here in view has, I think, been attained. What has been done is to lay the foundations for a positive theory of the Soul, by bringing the biological and the sociological points of view into their normal relation. This great subject is now finally incorporated into social science, and neither the obscurities of theology nor the mists of metaphysics will be able henceforth to hamper its progress. The true knowledge of Man as an intellectual, and above all as a moral being, has made no step of first-rate importance since the Middle Ages. Indeed, in many respects it has seriously retrograded, except in the writings of some of the leading mystics, who have formed and transmitted to us in their own way an adequate conception of the whole subject. Under the admirable impulse given by Gall, our knowledge of human nature at last assumed a systematic form, in the provisional adjustment made by him of statical conceptions with dynamical

research. Ephemeral as this first hypothesis inevitably was, it yet enabled me to lay the foundations of Sociology. And now the final science reacts upon the last of the introductory theories which prepared the way for it. The result is that a definite and systematic form is given to a conception which at first was merely empirical, and which would have produced no effect but for the genius of its originator, who in his own special path could have no successor. Thus remodelled, the physiology of the brain will soon rise from the stagnation in which it has lain since its first appearance, in spite of the accessory efforts of Spurzheim and even of Broussais. Throughout this Treatise it will be seen to be intimately bound up with the whole system of positive religion, co-operating thus in the regeneration of Humanity. It will henceforth be prosecuted by encyclopædic thinkers working under the constant impulse of the highest social interests.

The more important applications of this cerebral theory will not be seriously affected by the unsettled state in which some secondary questions have been left. In limiting myself to the number and the position of organs without specifying their form and size, I in no respect impair the logical value of the theory as a general means of summing up and co-ordinating all dynamical researches of real value, in which the ultimate statical conclusion will always be kept in view. The service thus rendered is extremely analogous to that obtained by geometers from curves as a means of concentrating thought upon equations, the direct discussion of which would be incoherent but for Descartes' admirable mode of condensing the result in a graphic form. In a similar way all investigations relating to each function of the Soul are concentrated in the corresponding organ; and thus the organ becomes their logical equivalent, the only mode in which they can be represented as a whole. For this purpose it is not essential that the statical solution should be carried further than it is at present. The curve is often of great service to the general discussion of the equation, even when merely the first step has been taken towards determining it, and when its form cannot be traced without the aid of hypothesis. Similarly, the situation and the number of cerebral organs will suffice to thinkers who are sufficiently prepared for it as a mode of comparing and describing the functions of the Soul. In the case of the principal functions, it

may here be remarked that the words inferior, middle, and superior, are in common use to designate the propensities themselves, as well as their positions in the brain. This is simply an illustration of the apt manner in which situation may serve to represent function.

Practical applications of the Theory.

Correlation of this kind between the Brain and the Soul offers the best mode of systematising our daily observations of the heart, mind, and character of animals, men, or nations; and of thus utilising observations which are now lost for want of any connecting link. As soon as I had effected my primary classification of functions, I had frequent opportunities of testing the value of its application in real life, at the same time that it served me as a general guide in new fields of thought. The publication of the theory here gives me an opportunity of increasing its philosophical value, even to myself. All true thinkers who devote themselves to this great subject will be able now to pass from the act to the agent, and conversely, with less effort than in other branches of vital study, where the same precision is neither possible nor necessary. The diagnosis, and the consequent treatment, of mental and moral disease will at last be cleared from the disastrous empiricism which has hitherto prevailed, and which too often results in entrusting the most difficult of medical duties to minds and characters of the lowest stamp. Further, the intellectual and moral study of animals, which as yet is limited to a few isolated cases, will assume its normal character and enter upon a path of continuous progress, throwing gradually fuller light on the positive theory of human nature, by connecting it with the lower types of vitality.

Its sociological bearing.

But the most direct, most extensive, and most momentous application of this biological construction will be in the science from which it emanates, Sociology. Implicitly I have already made frequent use of it in the General View. In the next volume the employment of it will be more explicit, and therefore more distinct and coherent. I must confine myself on the present occasion to pointing out the increased clearness which this theory of the Brain gives to the fundamental problem of human nature, the subordination of Egoism to Altruism. The form which that problem now assumes is this: To enable the three social instincts, with the aid of the five intellectual organs, to gain ascendancy over the impulse resultant from the seven personal propensities, restricting these latter to the necessary

limits, so as to concentrate the three active organs on the furtherance of social interests. Thus Biology ends by bringing forward the general question which it is for Sociology alone to investigate; since the only true solution lies in the aptitude inherent in the Social State of developing the higher attributes and repressing the lower.

Its logical bearing.

The scientific conclusion here reached would be sufficient reason for the detail with which I have examined this theory of the Brain as the organ of the Soul. But considering the purely logical aspect of the theory, it may serve as a general illustration of the primary object of this chapter, the explanation of the mode in which the whole of biological science should be systematised. For each principal section of the abstract study of Life should in turn undergo an analogous process of regeneration; the initiative being taken by the subjective method, aided to the necessary extent by objective enquiry, in accordance with the general plan previously explained. The type here spontaneously offered is especially valuable as illustrating an example of the great institution of hypotheses; instruments of thought of which Biology has hardly ventured to avail itself, although none of the preliminary sciences is so much in need of them. The nature of the cerebral problem rendered it necessary to make an unusually bold, and yet a most justifiable, use of this great logical artifice, so familar to students of Cosmology. Its true spirit, connected in the most direct manner with the relative system of thought, is that in every instance we form the best hypothesis of which the facts before us taken as a whole admit. The qualities of a good hypothesis naturally vary with the purpose which it is intended to serve. Speaking generally, it is characterised by simplicity, by beauty, or by utility, according as the conceptions to be reached are scientific, æsthetic, or practical. In the present instance all three orders of speculation are interested; the subject-matter being the source from which all alike proceed. The hypothesis presented should therefore be at once the simplest, the most beautiful, and the most useful. No better illustration of this logical institution could possibly be chosen.

Conclusion.

I have now described under all essential aspects the systematisation of biological science which Sociology alone can effect. The greater length of this chapter, as compared with the preceding, corresponds to the position which in the final arrange-

ment of Natural Philosophy the study of Life will occupy. In the process of education, which necessarily follows to some extent the course taken in the collective evolution of the race, the study of the World occupies more attention, as being the first source of positive methods and laws. But this provisional mode is restricted no less to the childhood of the individual than to that of the race. And while in this preliminary volume I have sought to regulate it, I have always borne in mind that the grand purpose of this Treatise is to systematise the state of full maturity, intellectual and moral. And in the normal state the study of Life, being more directly connected with the service of the Great Being by thought and action, will necessarily take precedence of the study of the World, which is less nearly related to it.

To sum up the results reached in this introductory volume. Positive Philosophy may be divided into Social Philosophy and Natural Philosophy: the latter being regarded simply as introductory; the former as the final goal of study. The introductory principles, logical and scientific, fall into two great divisions, Cosmology and Biology: the abstract study of the World, and the abstract study of Life. Neither element of this combination is reducible to the other; for though the organism presupposes the environment, it is in no way a necessary consequence of it. Thus the second of these sciences rests on the first; just as, when combined, they serve as a basis, the first directly, the second indirectly, for the universal science. At this point Positive truth, the source from which true religion emanates, passes from its original phase of a binary compound to the normal condition of a ternary series. And it is in this latter form, without further reduction, that it will usually present itself to the public mind; the sacerdotal function, however, requiring, especially for purposes of education, some further development.

Positive Philosophy thus stands before us as an orderly progression of conceptions; beginning with Cosmology, thence passing to Biology, and finally concluding with Sociology. Its two first terms develop respectively the sense of Order and of Progress. It is in the final term alone that the two are harmoniously adjusted, under the continuous impulse of the fundamental instinct which prompts Each to live for Others.

APPENDIX

TO

THE FIRST VOLUME.

I.

Speech delivered at Blainville's funeral, by the author of the System of Positive Philosophy, 15 Cæsar 62 (Tuesday, May 7th, 1850); somewhat enlarged two days subsequently, and published by the Positive Society.[1]

GENTLEMEN,

After all these official manifestations of respect, perhaps you will hardly be inclined to listen to one who comes simply as a philosopher, without any legal claim, to perform the function of a priest of Humanity over the tomb of the last really great thinker connected with Biology as an isolated science. A personal connection with the illustrious deceased of twenty-five years gives me a special claim to a systematic utterance on this occasion in the name of the past and future. My competence for such a task has been frequently recognised by him. A few weeks before his unlooked for death he had fully accepted the modest position which I had ventured to assign to him in the new Western Calendar.

In forming a final judgment of most men of mark we are perplexed by the antagonism between their intrinsic powers and the preponderant influences of their life. So great is this antagonism that in some cases the career which a thinker has adopted has been precisely the opposite of that for which he was in reality best adapted: so that it is only by a careful application of historical theory that a true estimate of his powers can be formed. The most striking case in point is Diderot, a man born for constructive effort of the loftiest kind, but forced by the influences of his century to take part in a work of mere destruction.

In Blainville's career the contrast was doubtless less deplorable. But it suffered from a want of harmony between his intellectual power and his social sympathies. Judging him, as I always did, by what he was capable of, I can interpret the undoubted shortcoming of his actual attainment in no other way. This narrowing influence of political reaction on scientific capacity shows strongly how important it is that great minds should share

[1] Vide p. 463.

largely in the general movement of Humanity. It is principally with the view of inculcating this salutary lesson upon the young that I have thought it right to take part in this funeral solemnity.

The final preparation for the elevation of Biology into a science was made in the eighteenth century by a series of independent thinkers, beginning with Bernard de Jussieu, Linnæus, and Buffon, and ending with Haller and Vicq d'Azyr. Their ever memorable efforts made it possible for life to be studied scientifically so soon as a sufficient basis of chemistry had been acquired. This effected, a rational positive spirit was introduced into all the principal conceptions of the science, especially those relating to vegetal and animal life: and it was not long in extending from these to the moral and intellectual domain. Bichat and Lamarck were the principal agents in the first stage of the process, Cabanis and Gall in the second: and a further essential step, the complete subordination of pathology to biology, was soon taken by Broussais. With these hopeful prospects the nineteenth century began. Science strictly so called was doing her last special work, having arrived at the point which made it possible at last to establish a sound philosophy as the immediate basis of true religion.

Blainville's part in this special task was clearly indicated. His intellectual powers were singularly adapted for the speculative necessities of the time. Each of the three great aspects of individual life, whether moral or physical, even including the consideration of anomalous forms, had been to a certain extent studied. But the various principles which had been laid down, whether statical, dynamical, or taxonomic, had been reached separately. No attempt had been made to think out their mutual relations. To systematise this, the most synthetic portion of natural philosophy, was now its principal requirement; and it was one peculiarly adapted to a mind whose co-ordinating powers surpassed those of any other biologist since the time of Aristotle, with the one exception of Bichat, whose universal capacity, whether deductive or inductive, lies beyond all comparison.

Blainville was not too late in becoming conscious of his mission. He never abandoned it, but yet never carried it through as he might have done. He attempted successively the co-ordination of our knowledge as to structure, function, and classification. But not one of these three tasks was left really complete. No one had so fully grasped each as a whole, and pointed out so truly their mutual relations; yet he left no substantive work revealing his full dogmatic power. Possibly the best appreciation of him is to be formed from my own philosophical treatise, where his scientific contributions, especially with regard to animal classification, are impartially estimated. His power of systematisation never passed beyond that first stage of elaboration which suffices for oral exposition. Consequently Blainville's highest merits could never be known except to those who were so fortunate as to follow without interruption a complete series of his admirable lectures. In a time when, for want of philosophical direction, men of science have lost the true didactic art, the teaching of such a thinker will leave deep memories. Yet even if, like those of Boerhaave, they should not pass away, they will but confirm with posterity the regret and the blame which I now express for the deplorable failure of a career so eminently adapted for great biological constructions.

Nor can this result be explained entirely by the omission from his education of the mathematical basis, so essential to full development of

thought, especially in minds of a systematic cast. This defect is unfortunately common to all the biologists of the day: yet in spite of it Bichat, and even Cabanis, Gall, and Broussais, accomplished great results. For Blainville it was more likely to be injurious, yet not to the extent of producing failure. Besides, had not political and moral distractions prevented him, so powerful a thinker would have seen the importance of mathematical training, and would easily have acquired it.

Intellectual conditions, then, will not alone account for a life so promising to science falling short of its powers and opportunities. We can only explain this grievous anomaly by the retrograde tendencies which prevented this great mind from frankly accepting the general movement of his age.

The five founders of Biology had all had deep experience of the revolutionary impulse, and each in his way had done much to forward the regeneration in which it is to issue. Blainville alone, while following them scientifically, was so unfortunate as to reject their philosophical spirit and social purpose. Hence the inevitable failure of his principal speculations, unsupported as they were by the noble stimulus necessary in all abstract exertions of our feeble intelligence.

His first political impressions were those of the sanguinary misdeeds which accompanied the first Revolution. The long period of reaction which followed was the more acceptable to his growing powers of thought that caste prejudices and also family misfortunes predisposed him in that direction. His political leanings, however, were never able to interfere with the complete intellectual emancipation implied by his scientific career. A brain so strong as his could not, in our day, suffer from the terrible fluctuations which crushed the weak character of Pascal. His resistance to progress only deprived him of the powerful intellectual stimulus that springs from an abiding consciousness of the connection between individual efforts and the general tendencies of all around us. His concessions to theology never went beyond acknowledging the social necessity of belief in Christianity: he never accepted its dogmas as real. Though constantly urged to take part in the services of the Church, he was too independent ever to yield.

It would seem that so logical a mind should have suffered more from these internal struggles. But it must be remembered that his political sympathies were for a long time a special safeguard against philosophical retrogression. While the so-called restoration lasted, Blainville, who was sincerely devoted to this precarious phase of government, felt, like other clear-sighted men, how much its existence was endangered by its theological connections.

Thus the influence of Catholicism in his case was kept in check during the most important part of his life, from the time when his scientific career opened with such promise down to the close of his special course of lectures on dynamic Biology. During twenty years of full vigour this lofty intellect, reactionary sympathies notwithstanding, was in the truest sense progressive. It will never be forgotten that in his earliest publications he did full justice to the great work of Gall, who was still labouring under official persecution, and was most unworthily treated by the so-called organs of public opinion. Ten years afterwards Blainville cordially welcomed my first sketch of true social science based on the general principles of natural philosophy. Indeed, this it was which led to our long friendship, which remained undisturbed by perfect freedom on either side: a

relation which, had he had any real theological convictions, would have been impossible. I shall always remember his acknowledgment of the honour shown him in being associated in the dedication of my philosophical treatise with the last of the great geometers.

But this fortunate inconsistency ceased with the fall of his political party. Passing irrevocably from administration to mere opposition, this party now began to lean more and more on the obsolete principles which its best leaders, while in the Government, had shrunk from enforcing. And thus the retrograde movement which for a long time had been limited to politics, now extended to philosophy; and during the second part of Blainville's career, hardly shorter than the first part, it even invaded science. Posterity will remark this gradual decay of a mind which yet had already produced all its real claims to immortality. For the period of decline, apart from temporary results soon to be forgotten, has unfortunately left permanent records which the name of their author is likely to preserve. He who did more than any one to systematise the scale of animal life, ended by placing it under the fatal patronage of theology. The only treatise which Blainville finished, that on the history of biological science, is essentially unworthy of him both in form and substance. My fruitless remonstrances against its publication showed me indeed that he had already lost the sense of the conditions requisite for such a work.

While reflecting on this fall, the question occurs how the social influences referred to could have exercised such a fatal influence. Minds less vigorous than his were subjected to the same reactionary forces both in private and public life, without the same injurious results. To answer this I must examine the nature of this great biologist more closely.

Catholicism long ago recognised the truth that moral imperfection was the chief source of intellectual error. This instinctive perception of the Middle Ages has already been systematised by the best modern philosophy. The ascendancy of the heart over the intellect, both for good and evil, is now a demonstrated truth. Applying it in the case which we are now examining, it will be seen that Blainville's intellectual degeneracy was largely due to the defects of his moral organisation.

Not that his powers of thought were unaccompanied by the qualities indicated in the masculine acceptation of the word *Heart*. His courage and his firmness are in striking contrast with the degraded character of most savants of the present time. And he made good use of these qualities early in his career, vigorously breaking through the shackles cunningly imposed by a man of unmerited celebrity, now justly forgotten. He possessed then in addition to the highest attributes of intellect, the principal qualities of active life, not excluding prudence, without which this direct result is so often lost. But to this rare combination a sufficient development of the sympathies was not added. Here lies the real source of a failure which it is important now to explain; to show the new generation that powers of intellect and of character united miss their full result unless moved by impulse from the heart, in the feminine sense of that word.

This will not surprise those who know that our affections are at once the principle and the end of life; intellect and energy serving only as means. And this moving principle may proceed in two wholly different ways, according as the dominant impulse may be personal or social. Great as is the vigour of the self-regarding instincts, all the noblest intellectual effort proceeds from the sympathies alone. These alone can awake the charm

inherent in the social purpose of abstract speculation. These alone can give the right impulse to scientific meditation, and sustain the firmness required for theoretic construction.

But the motives that habitually influenced Blainville were for the most part personal, and his cerebral organisation was not such as to dispose him to the kindlier affections, either in private or in public. His egoism, however, was of the nobler sort, untainted by the coarse cupidity or the puerile fondness for power which animate so many of the scientific men of our time. Spiritual ascendancy was all that he desired, but he did not connect this with the general progress of humanity. He perfectly understood the necessary distinction between philosophic power and political power. He was mercilessly severe to men of science who sought political positions. He considered, and rightly, that such conduct showed a secret sense of intellectual weakness. During the whole time that his political friends were in power, he steadily rejected the most flattering invitations to political office. His credit with them was not maintained by seeking their society. Such as it was, it was employed for the benefit of others, in resistance to scientific jealousies veiled under political pretexts which he knew how to disregard. Too vigorous to attach himself to any academic coterie, he was the first to insist on proper guarantees for the independence of thinkers. But the promptings of scientific pride were not under the control of true social feeling. It led him often to aim at procuring for learned bodies an authority which they no longer deserve.

The predominance of the higher personal propensities was no substitute with Blainville for his natural imperfection in true sympathy. His lofty intellect made him frequently declare that morality is the first condition of theoretical eminence. He even controlled his pride sufficiently to recognise sincerely the importance of universal fraternity. But his heart was altogether without the spontaneous impulses for which no reflection can be a substitute. To live for others was for him the law of duty, not the type of happiness. Thus, true human morality was only half known to him. Blainville lacked the sacred fire which urges on to the active pursuit of good without weariness or effort, with no reward but the inward joy that follows it. In this, the sole source of true unity, the humblest woman worthy of her sex ranks above the most powerful thinker devoid of tenderness. Goodness of heart helps forward a theoretical career more than force of character. Blainville might have seen a proof of this in the eminent geometer above mentioned, whose truly sympathetic nature was the cause of his scientific development not being seriously hampered by his undoubted want of energy.

Such is the real explanation of the failures and discordances of this imperfect career. Impulses of too personal a kind enfeebled the ardour and constancy required for Blainville's intellectual task; and the full strength of his mind was never put forth. In spite of his principles of subordination the true moral principle of submission was wanting. He saw rivals where he should have seen colleagues, and sometimes superiors. Always unjust to Broussais, he failed to recognise the transcendent greatness of Bichat. When personal feeling extends so far as this, it hinders the working of general views not less than of generous feelings.

It is necessary to scrutinise Blainville thus, in order to understand the persistency of his retrograde views, with regard to which his vigorous intellect could otherwise have easily overcome the prejudices of childhood and even those of birth. Such a nature could not accept a revolution of which

the principal purpose was to subordinate all personal feeling to social interests. This, too, is what prevented his frank adoption of the positive philosophy: attracted to it intellectually, he rejected its moral and political applications. Even his intimate knowledge of Catholicism could not inspire him with sufficient respect for the careful culture of the heart which is the best feature of true Christianity. This he thought was only necessary for common natures. Nothing would have drawn him to it, except the conviction of its intellectual value. But the systematic action of the heart upon the mind is one of the most precious fruits of Positivism; and Blainville studied Positivism too slightly and too late to utilise it thus. His repugnance to the Revolution did not therefore save him from the principal symptom of the revolutionary state, the insurrection of the mind against the heart, from which the whole Western population has increasingly suffered since the close of the Middle Ages.

A better moral organisation would have shown Blainville all the dangers of the fatal hardness attendant on scientific culture, especially in our time. His careful esthetic training would in that case have supplied wholesome distraction; whereas, in spite of this unusual advantage, he never acquired a true feeling for the fine arts. Resources still more efficacious might have been found in family affections, the only normal guarantee for healthy moral development. But here his egoism was an obstacle, though his celibacy was, as he confessed to me in later years, a source of frequent regret.

Such was the way in which one of the strongest intellects that ever existed was impaired solely by moral feebleness. Isolated from the generous movements of his century, Blainville failed to attain an historical position at all corresponding to his intrinsic worth. With the one exception of the incomparable Bichat, he was in reality equal, if not superior, to any of the great founders of Biology. And yet he will not be placed at their level. Cabanis is the one whom he specially resembles in depth of view and co-ordinating power, yet his life on the whole remains inferior, though longer and more laborious. His principal work has induced me to place him by the side of Lamarck in the Occidental Calendar. Notwithstanding his intractable pride, his candid judgment at once accepted this humble rank, though Blainville must have known himself to be virtually the superior of that eminent biologist.

Imperfections of the heart are less disturbing to the character than to the mind. Yet even in Blainville's action his deficiency in affection showed itself. Activity, like intellect, is fully developed only by sympathetic impulses, never by personal feelings, although these take the initiative in the advance of both. In spite of unusual firmness, Blainville showed real want of energy on several important occasions of his public life, not merely in civic, but in academic relations. Having pointed this out at the time, I am warranted now in drawing the important lesson which such a contrast teaches.

These brief remarks will already have answered the question whether this great thinker was really happy, even though possessing all the external conditions of happiness. In spite of constant efforts to forget his loneliness, his seeming cheerfulness could only pass current with superficial observers; no woman could ever be deceived by it. Blainville was not happy because he never loved deeply, though he had been sincerely loved. His melancholy end was but too characteristic of his whole life. Unforeseen and painless death is only suited for egoists: because no farewell can be given or received.

Such, Gentlemen, is the moral teaching to be drawn on this sad occasion from a most opportune and signal example. The temples of Humanity will naturally be surrounded by the tombs of the good and great: for the true Great-Being consists essentially of the dead worthy to survive. No place then could be better suited for the religious teaching of positive morality, from which we learn how best to harmonise each individual life with the eternal evolution of mankind.

To make my principal intention more distinct, I may add that the failure of Blainville's career was more prejudicial to his own fame than to the general progress of Biology. The condition of thought in his time was not such as to make a final synthesis of vital studies possible. This great task, which is now left to the younger biologists who may be worthy of it, can only be performed under the direct impulse of Sociology, the sole permanent source of encyclopædic construction. The synthesis which Blainville failed to execute was therefore purely provisional, although it might have rendered great assistance to the final work, even had it embraced one only of the three aspects of vitality.

What Blainville omitted to perform will not be again attempted. Left without his assistance, the encyclopædic biologists of the future will be forced indeed to make more strenuous efforts in building up the Abstract Theory of Life, but will not wait for the result of preparatory labours which are no longer required. Universal science and final religion have now begun to exist. These are the objects on which future thinkers must expend their efforts, if they would save themselves from failure more complete and less excusable than that of Blainville.

This mournful burial of the last thinker who has made real contributions to the last of the preliminary sciences, marks definitely the close of the provisional phase of modern speculation. The utility of specialities is now exhausted. Henceforth they will give way to encyclopædic thought, which alone is adequate to deal with the present needs of revolutionary Europe. Moreover, such culture is the only way to enlarge the domain of thought, and even to secure the possession of former gains. The speeches you have just heard are sufficient evidence of the prevailing tendency to disintegrate Biology on the authority of overrated names. This empirical and subversive procedure is likely to increase now that the only influence which could control it has perished. The Scale of Life, Blainville's principal field, is threatened now with utter subversion at the hands of investigators who are incapable of understanding its value. It can be saved only from above, by the universal discipline emanating from true Social Science, which will reserve all speculative study for encyclopædic thinkers. Such men will be always ready, alike on moral and intellectual grounds, to give full generality to their special conceptions. Blainville's organic although retrograde instinct had given him a confused sense of the necessity of connecting Biology with the general beliefs of men: the mistake was in the system which he chose. Science in the Middle Ages was essentially subject to the religion of God. Reason and morality now call for its far completer subjection to the religion of Humanity.

Auguste Comte.
10, Rue Monsieur-le-Prince.

[Published 3 St. Paul, 62; Thursday, May 23, 1850.]

P.S. To understand this speech, it may be remarked that at its commencement all representatives of the various obsolete schools, theological or

academical, took their departure. The cession of the field to positivists shows clearly enough where Blainville's fame will be finally preserved. Though claimed now by corporations which he despised, and which were a constant source of vexation, it will soon rest with the only school that knew his worth, and which has already dethroned his celebrated oppressor. Blainville will pass over to the camp where his qualities are recognised, not to that which degrades his work.

If Humanity consists of those lives that have merited incorporation, so too it admits that part of each that is harmonious with the general evolution; discarding transient divergence. In the new Occidental Calendar I did but give formal expression to the general verdict in placing Tycho-Brahé by the side of Copernicus. Though scientifically opposed, they both co-operated unconsciously in the great crisis of modern astronomy. So too the successor of Lamarck will hold a permanent place in our gratitude, as one of the founders of Biology, and therefore a pioneer of Sociology, although he saw less clearly than his chief whither his efforts tended.

II.

Appendix to the Dedication.

Paris, 12 Dante 62; Saturday, July 27, 1850.

I append to this exceptional dedication the only work ever published by my sainted colleague. This touching story, the leading incidents of which bear a strong resemblance to the melancholy circumstances of her married life, was inserted in the *National* of the 20th and 21st of June, 1845. I reprint it here, as an evidence to competent judges of the high intellectual and moral qualities, unrecognised though they were, of the angel who watched over my second life.

To this I subjoin an unpublished letter upon Social Commemoration; which should have appeared with *Lucie*, but for the unfriendly spirit of a well-known journalist, no longer in repute. This short essay has a certain historical interest for those who are acquainted with the Religion of Humanity. They will there see the first distinct and direct germs of a vast moral and social synthesis springing up from a simple expression of personal feeling. The normal influence of the Heart on the Mind was thus illustrated in my case many years before the theory of it had been definitely formed.

Lastly, I add an unpublished canzonet, which Mme. de Vaux intended to have inserted in her 'Willelmina,' although it was written in 1843. These graceful verses, the sweetness of which might have been envied by Petrarch, may show the pliancy and versatility of powers fitted, however, for the highest sphere of work. The poetic tendency of this gifted nature showed itself unconsciously in her slightest inspirations. It is marked, for instance, in some words written twenty-two years ago in an old copy of the *Journée du Chrétien*, religiously kept by me: 'Precious remembrance of my youth, companion and guide of the sacred hours that have past by, bring back ever to my heart the grand and beautiful services of the convent chapel.'[1]

[1] The story of 'Lucie,' and the poem that follows, are printed in the original French, on esthetic grounds.—[Tr.]

1. LUCIE.

Il y a quelques années, un crime, compliqué de circonstances extraordinaires, vint frapper de stupeur la petite ville de ——

Un jeune homme appartenant à une famille distinguée avait disparu sous une prévention terrible : on l'accusait d'avoir assassiné un banquier, son associé, en lui soustrayant des valeurs considérables. Ce double forfait fut attribué à la funeste passion du jeu. Le coupable abandonnait, après quelques mois de mariage, une jeune femme douée d'une grande beauté et des qualités les plus éminentes. Orpheline, elle restait, à vingt ans, livrée à l'isolement, à la misère, et à une position sans espérance.

Les lois lui accordèrent spontanément la séparation de corps et de biens, c'est-à-dire de tout ce qui lui échappait. La famille de son mari lui prêta un abri et une paire de souliers. Comme elle était généralement admirée, des protections puissantes l'environnèrent de toutes parts.

C'était heureusement une de ces nobles femmes qui acceptent le malheur plus facilement qu'une transaction honteuse. Son intelligence élevée lui montra sans voiles sa situation : elle comprit qu'elle ne devrait l'intérêt des hommes qu'à sa beauté ; elle pressentit les périls que couvrent de douces sympathies, et voulut tirer d'elle seule tout adoucissement à son sort. Cette courageuse résolution étant prise, la jeune femme ne pensa plus qu'à l'exécuter. Possédant un talent remarquable, elle se rendit à Paris pour l'utiliser. Après quelques épreuves, elle fut admise, comme institutrice, dans la maison de l'Abbaye-aux-Bois, où elle trouva un asile honorable.

Pendant ce temps, la justice suivait son cours ; des démarches actives cherchaient partout la trace du fugitif. Déjà les créanciers irrités s'étaient partagés la dépouille de sa malheureuse victime, dont les vêtements, les bijoux, et jusqu'aux petits trésors de jeune fille, avaient été vendus à la criée. Elle inspirait tant d'intérêt que quelques personnes rachetèrent plusieurs de ces objets et les lui renvoyèrent.

Une jeune fille voulut avoir un médaillon qui renfermait le portrait de l'héroïne, et le curé du lieu acheta sa robe nuptiale pour en parer l'autel de la Vierge.

Ces détails touchèrent vivement l'infortunée. Une noble fierté se joignait, dans son cœur, à une sensibilité profonde : elle se sentit soutenue par les témoignages d'intérêt qui lui venaient de toutes parts. Remplie d'effroi au souvenir de son premier amour, elle n'envisagea sa chaîne que comme une barrière qu'elle eût volontairement placée entre les hommes et elle. L'horreur et les périls de sa situation échappèrent ainsi à ses regards, et elle accepta sans révolte l'arrêt injuste des lois.

Un sentiment indestructible, une douce et sainte amitié d'enfance sauva d'abord à ce noble cœur les amères douleurs de l'isolement. La philosophie, si mesquine et si aride dans les âmes égoïstes, développa ses magnifiques proportions dans celle de la jeune femme. Pauvre, elle trouva le moyen de faire le bien : elle allait rarement dans les églises, où la frivolité a établi ses comptoirs ; mais on la rencontrait souvent dans les mansardes, où le malheur est fréquemment réduit à se cacher comme la honte.

Deux années s'écoulèrent sans qu'aucun événement vînt changer cette situation étrange et malheureuse. Le temps, qui ne fait qu'accroître les grandes douleurs, avait ruiné peu à peu l'organisation brillante de l'orpheline. À son courage héroïque, à ses efforts persévérants pour rester dans le rude chemin qui lui était tracé, commençait à succéder un abattement pro-

fond. Treize lettres, qui sont tombées entre mes mains, peindront mieux que moi les douleurs de ce cœur malade. Je demande la permission de les reproduire et de terminer ainsi cette histoire.

1re Lettre.—Lucie à Madame M.

Je t'écris de Malzéville, où je vais passer quelques mois, ma bien-aimée. Ma poitrine avait besoin d'air et de lait; nos dignes amis ont saisi ce prétexte pour m'offrir de partager leur jolie solitude. Combien j'aime ces excellentes gens! Que ne puis-je leur ressembler ou faire passer dans mon cœur un peu de la paix qui règne au fond des leurs! Je me sens pourtant mieux ici: rien n'est sain comme le spectacle d'une belle nature et de cette vie laborieuse et uniforme qui force l'esprit à se régler.

Le général attend prochainement l'arrivée de son voisin, qui passe pour le bienfaiteur de toute cette petite contrée. C'est un jeune homme de vingt-six ans, possesseur d'une belle fortune, et disciple sincère des idées libérales. Il a avec lui sa mère, qu'il adore, et dont on dit aussi beaucoup de bien.

Tu m'engages à cultiver les fleurs pour me sevrer un peu de musique et de lecture. Hélas! ma bien-aimée, ne sont-ce pas là les seuls plaisirs qui me restent? Quand j'ai payé mon faible tribut à l'amitié, quand je viens de lire au général quelques passages de ses mémoires, quand nous avons évoqué ensemble de grands et sévères souvenirs, ou quand j'ai partagé avec notre amie ses petits soins d'intérieur, je me trouve de nouveau en proie à ce besoin de sentir et de penser qui est devenu le principal ressort de mon existence; et pourtant nulle femme plus que moi n'aima la vie paisible et simple. Quels plaisirs brillants n'aurais-je pas sacrifiés avec joie aux devoirs et au bonheur de la famille! Quels succès ne m'auraient paru fades auprès des caresses de mes enfants! O mon amie, la maternité, c'est là le sentiment dont le fantôme se dresse, si jeune et si impétueux, dans mon cœur. Cet amour, qui survit à tous les autres, n'est-il pas donné à la femme pour se régénérer dans ses douleurs?

2me Lettre.—Maurice à Roger.

Roger, j'ai enfin vu cette femme, si grande et si malheureuse, dont tu me parlais avec orgueil. Ne dis pas que le sort en est jeté, si je t'avoue l'impression profonde que j'ai ressentie à l'aspect de cette jeune et belle martyre des injustices sociales. Les touchantes vertus de Lucie, son esprit, ses grâces, tout en elle porte à jamais l'empreinte d'un profond chagrin. On sent, en la voyant, qu'elle aura besoin de générosité pour aimer. Pourtant, n'est-elle pas libre devant l'honneur et la raison? Par quelle étonnante imprévoyance des lois l'être pur et respecté peut-il se trouver enchaîné, par la société même, à l'être flétri qu'elle repousse de son sein?

Qu'appelle-t-on mort civile? Est-ce un simulacre? Dans quel but la société laisse-t-elle une épouse à l'homme qui ne peut plus donner le jour qu'à des bâtards?

De quel droit imposerait-elle l'isolement et le célibat à l'un de ses membres? Pour quelle fin le pousserait-elle au désordre?

Mais j'ai l'air d'être devant les juges. Roger, mon sang est près de s'allumer quand je vois combien l'apathie des hommes enfante souvent le malheur et l'oppression.

Je viens de faire construire un belvédère en vue de Malzéville: de là

avec une lunette je découvre entièrement la jolie maison du général. Hier, j'ai aperçu Lucie qui était assise au bord de la pièce d'eau ; son attitude était mélancolique et accablée. Ici le dirai-je, ses regards me semblaient se diriger vers le sud. Hélas ! en la voyant si gracieuse et si brisée, je me demandais avec dégoût le secret de certaines influences sur notre cœur. Pourquoi voit-on des femmes vulgaires fasciner des intelligences supérieures et devenir l'objet d'un véritable culte ? Comment arrive-t-il aussi que la générosité et la noblesse de certaines femmes se voient si souvent aux prises avec l'égoïsme et la grossièreté ? Il faut renoncer à expliquer cette énigme.

Puisque tu veux une description nouvelle d'Oneil, je te dirai, mon cher Roger, que j'en ai fait une des plus jolies propriétés du département. On me racontait ces jours-ci une récente contestation à mon sujet entre les habitants de la commune voisine et un vieux gentilhomme ruiné. Il ne s'agissait de rien moins que de décider si l'on devait le titre de château à Oneil et le premier morceau de pain bénit à son propriétaire. J'ai tranché la question en n'allant pas à la messe et en appelant tout le pays ma vallée.

3me Lettre.—Maurice à Roger.

Non jamais, Roger, jamais une autre femme ne fera naître en moi ces sentiments généreux et élevés que m'inspire la seule vue de Lucie. Ami, tu as dit vrai : c'est en vain que les lois, l'opinion, et le monde élèvent entre nous leur triple barrière ; l'amour nous réunira, je le sens. Qui mieux que toi connaît les besoins de mon cœur et son insurmontable répulsion pour les bonheurs vulgaires ? Hélas ! avant de rencontrer Lucie, je l'ai souvent senti, c'est un danger de raffiner ses sensations.

Tantôt ma mère a fait sa visite à Malzéville. J'étais curieux, je te l'avoue, de connaître l'impression que Lucie produirait sur elle. En arrivant devant la grille du petit parc, nous l'avons aperçue qui greffait un rosier. Elle était vêtue de blanc ; un grand chapeau de jardin couvrait négligemment sa tête, un simple ruban vert dessinait sa taille fine et élégante. On eût dit, à la voir, le plus suave idéal de la Galatée. Je fus surpris de n'apercevoir aucune émotion sur le visage de ma mère, elle ordinairement si bienveillante, et qui trouve tant de plaisir à admirer : elle fut imposante et froide pendant toute la durée de notre visite. Les mots *devoir* et *honneur* trouvaient place dans toutes ses phrases.

Pour la première fois j'entrevis ce qu'il y a d'amer et d'implacable dans les rivalités féminines. Guidée par ce tact délicat que donne l'habitude de la souffrance, Lucie se retira avant nous sous un léger prétexte. Que n'ai-je osé la suivre et me jeter à ses pieds pour protester contre les paroles de ma mère !

Roger, ce moment fixe à jamais mon sort. J'ai compris qu'il n'appartenait qu'à moi d'arracher cette douce victime au malheur. Périssent les chimères qui se dressent entre nous ! Je me sens fort, contre la mauvaise foi de l'opinion et contre le blâme des envieux ; puissé-je l'être contre la générosité et la grandeur de Lucie !

4me Lettre.—Maurice à Roger.

On maudirait volontiers la civilisation et les lumières, quand on voit le petit nombre d'esprits justes et des cœurs droits qu'il y a dans le monde. Je ne saurais le dire combien d'insinuations mesquines et odieuses j'ai à subir

chaque jour au sujet de Lucie. Mais, ce qui n'est pas le moins choquant, tout l'honneur reste à ces corrupteurs de morale, qui se dressent orgueilleusement sur leurs monceaux de sophismes. Il semble, en vérité, que le succès n'accompagne que les guerres honteuses.

Je viens d'avoir, avec ma mère, une conversation pénible, qui n'a que trop confirmé mes idées sur le dévouement. C'est une magnifique vertu, mais qui vit bien plus volontiers de jouissances que de sacrifices. J'ai dernièrement rencontré, dans le monde, la jeune comtesse de ***, dont le mari est au bagne. Elle avait vingt-quatre ans quand cette fatalité l'a frappée; elle était remarquablement jolie et aimable. Le digne L. . . en est devenu amoureux, et ils se sont unis. Eh bien! elle me racontait que ce qu'elle a eu à souffrir de sa propre famille est incalculable. Comme je lui en témoignais mon étonnement, vu leurs idées avancées à tous, elle me répondit: En êtes-vous donc à votre catéchisme de l'homme? Ils m'autorisent bien à être athée, mais non pas à me passer des sacrements.

Tant il y a, mon digne Roger, que cette admirable humanité n'est pas encore bien quitte de sa dette envers les singes, dont quelques docteurs assurent qu'elle descend directement.

5me Lettre.—Maurice à Lucie.

Qu'avez-vous fait, Lucie? À quelle funeste pensée avez-vous obéi en vous éloignant de moi? Hélas! c'est en vain que je cherche à justifier votre silence: il accable mon cœur comme un fardeau glacé. Et pourtant, hier encore vous m'avez fait chérir la vie. Votre âme semblait s'ouvrir à l'espérance. Quand un faible danger m'a menacé sur les bords du lac, vous vous êtes élancée à mon secours sans paraître redouter la présence de ceux qui nous entouraient. Que vous étiez belle à cet instant, et que le dévouement vous rendait imposante! N'avez-vous donc pas lu dans tous les regards l'enthousiasme dont vous étiez l'objet? O Lucie, quand il ne fallait peut-être que vous montrer ce que vous êtes pour attendrir le cœur de ma mère, par quel inconcevable malheur nous trouvons-nous séparés? Mais peut-être n'êtes-vous pas la femme angélique que j'avais cru entrevoir; peut-être un amour généreux est-il au-dessus de vos forces? Peut-être... Mais à quoi bon tous ces doutes? vous seule pouvez me rendre le repos que vous m'avez ôté: j'attends une ligne de vous, un mot qui m'apprenne quels sont vos desseins. Songez-y! je ne réponds pas de moi si vous continuez à m'accabler de votre silence.

Manuel va courir à franc étrier jusqu'à Paris: dans dix heures je puis avoir votre réponse.

6me Lettre.—Maurice à Roger.

Fallait-il donc que cela fût ainsi? Roger, l'avoir connue, savoir ce que renferme ce cœur élevé, cet esprit délicat, et peut-être, dans quelques heures, avoir à déplorer sa perte! Que mon malheur retombe à jamais sur ceux qui l'ont causé! Hélas! quand je l'accusais de ce que j'ai souffert, elle succombait à la violence de ses combats et de son amour. J'erre comme un fou autour de la maison du général, interrogeant sans cesse ses gens, et ne recevant d'eux que des réponses vagues ou effrayantes. Heureusement, le médecin ignore qui je suis, et il me plonge trois fois par jour la vérité dans le cœur. Je viens de le quitter à l'instant; son regard était si triste, il semblait si accablé que je l'ai conjuré de ne pas me cacher le dernier malheur. Il m'a

assuré qu'elle existe encore ; mais il est dans l'attente d'une crise terrible et inévitable. . . .

P.S.—Elle est sauvée ! Il faut aimer comme j'aime pour comprendre la magie d'un tel mot. Je me suis prosterné aux pieds du médecin ; je lui ai demandé son amitié. En vain il conserve un air grave, je me sens prêt à faire des folies en sa présence. C'est un homme distingué, il parle de Lucie avec un enthousiasme presque égal au mien. Mais une chose m'a frappé ; il m'observe souvent avec étonnement, et semble prêt à me confier un secret. J'ai vainement essayé plusieurs fois de lui faire dire sa pensée. Il termine toujours nos entretiens sur Lucie par cette phrase : La société est bien coupable.

J'ai souvent remarqué que la prudence est le vice des hommes de cette profession, que leurs profondes connaissances rendraient si propres à seconder le mouvement social. Que d'importantes modifications pourraient être produites dans les lois par la seule autorité de certains faits scientifiques qui demeurent éternellement cachés au vulgaire ! Je voudrais qu'un bon médecin publiât ses mémoires ; ce serait, à mon gré, un livre fort utile à l'humanité.

7me Lettre.—Maurice à Roger.

Ami, je l'ai revue ! Hélas ! on n'ose croire qu'elle appartienne encore à la terre, tant sa beauté a revêtu un caractère idéal et céleste. Elle a consenti à faire sa première promenade appuyée sur mon bras, et j'ai été étonné de la simplicité avec laquelle elle m'a dépeint ses souffrances. Si je ne me trompe, une lueur d'espo r s'est glissée dans son cœur ; mais je n'ai pu m'expliquer le sens de plusieurs de ses paroles. Comme nous nous reposions à l'ombre d'une petite chapelle en ruines, une noce de villageois est venue à passer devant nous. Il y avait tant de bonheur et d'insouciance sur toutes ces physionomies ouvertes, que je n'ai pu retenir une réflexion amère en comparant nos sorts. Lucie a tressailli en m'entendant. 'O mon ami,' s'est-elle écriée, 'ils sont heureux ; mais c'est parce que leur bonheur n'afflige et n'offense personne.' Je l'ai regardée avec stupeur ; son visage était légèrement coloré ; elle a posé ma main sur son cœur ; puis elle a repris d'une voix grave et émue : 'Maurice, c'est en vain que notre malheur nous pousserait à nous élever contre la société ; ses institutions sont grandes et respectables comme le labeur des temps ; il est indigne des grands cœurs de répandre le trouble qu'ils ressentent.' J'ai voulu lui répondre, mais elle m'a fait un signe de la main pour m'indiquer qu'elle se sentait faible. Il commençait à se faire tard. Le digne docteur, qui déjà s'inquiétait de ne pas voir rentrer Lucie, est venu à notre rencontre, et il m'a aidé à la soutenir jusqu'à l'entrée du parc de Malzéville, où il a fallu nous séparer.

Roger, ce qui m'effraye, c'est moins l'ensemble des obstacles qui m'entourent que la grandeur naturelle de Lucie. Ce n'est pas à de vains préjugés, je le sens, qu'une telle femme a dû jusqu'ici immoler les plus doux penchants de son cœur.

8me Lettre.—Lucie à Madame M.

Mon amie chérie, l'espérance m'a accueillie à mon retour à la vie : Maurice consent à élever sa grande voix pour protester contre l'abus terrible qui nous sépare. Sa mère m'a pressé sur son cœur ; je n'oublierai jamais les sensations délicieuses que ce moment a mêlées à l'amertume de mes souvenirs.

O ma bien-aimée! l'amour d'un homme pur et délicat est un sentiment plein de puissance. Combien j'ai besoin de force et de courage pour y résister! Mais l'intérêt et la gloire de Maurice me sont plus chers que mon repos peut-être; aussi suis-je soutenue par l'orgueil de lui voir tenter une noble entreprise; car il me semble que j'ai accompli la mienne en véritable héroïne.

C'est hier seulement que notre sort a été décidé. Nous avions passé la soirée avec le digne docteur, dont la morale est à la fois si douce et si élevée. À peine nous eut-il quitté, Maurice saisit impétueusement ma main: et, la pressant sur son cœur, il jura de me protéger malgré le monde et de ne plus permettre que je m'éloignasse de lui. Je rassemblai mes forces pour lutter contre ces émotions délicieuses et terribles. Je représentai à Maurice que le devoir lui commandait d'essayer de m'affranchir de mes liens, en réclamant une loi juste et sage. J'employai pour le toucher les arguments qui ont le plus de prise sur son grand cœur. Je lui dépeignis avec feu les avantages que la société pouvait retirer de cette tentative glorieuse. Pour lui il ne fut pas difficile de l'intéresser au sort de ces êtres jeunes, faibles, désarmés, qu'un lien odieux peut pousser au désespoir. Il convint que les abus des lois résultent le plus souvent de l'apathie des hommes, et qu'il est toujours honorable et utile de lutter contre l'oppression.

Nous envisageâmes ensuite notre situation sous tous les points de vue. Maurice assurait qu'un lien, comme celui qu'il m'engageait à contracter, suffisait au bonheur, et qu'il renoncerait, sans le moindre regret, à ce monde qui sacrifie le véritable honneur à des préjugés fièrement décorés du nom de convenances. Je lui avouai que je ne me sentais ni assez haut, ni assez bas pour braver l'opinion, et qu'il me serait doux de pouvoir entourer notre amour du respect des familles honnêtes. Il combattit doucement mes idées; mais le souvenir de sa mère se joignit dans son cœur à tous les sentiments élevés qui lui sont propres. Il finit par me promettre d'adresser une pétition à la Chambre, et d'en attendre dignement le résultat.

Je me précipitai aux pieds de cet homme si cher, en versant des larmes de reconnaissance et d'amour. Les efforts que j'avais faits pour le contraindre avaient tellement épuisé mes forces qu'il me sembla que la vie allait m'abandonner. Je n'en ai jamais tant senti le prix que dans cet instant.

O mon amie! toi qui vis calme et heureuse auprès de l'homme de ton choix, tu comprendras tout ce qui se passe dans mon pauvre cœur. Tu sais si je partage le ridicule de ces femmes qui trépignent à l'idée de n'être jamais député, et qui montent à cheval pour démontrer qu'elles seraient au besoin d'excellents colonels de dragons. Mais tu sais aussi si je sens vivement l'oppression là où elle est réelle. C'est en portant atteinte au bonheur modeste et vrai de la femme que les lois la poussent en dehors de sa sphère et lui font parfois méconnaître sa destinée sublime. Henriette, quels plaisirs peuvent l'emporter sur ceux du dévouement? Entourer de bien-être l'homme qu'on aime, être bonne et simple dans la famille, digne et affable au dehors, n'est-ce pas là notre plus doux rôle et celui qui nous va le mieux? Il me semble que le cercle de la famille peut se modeler, à certains égards, sur les cercles du monde; et n'est-ce pas la femme qui en fait les honneurs?

9me Lettre.—Maurice à Roger.

Une nouvelle douleur vient de fondre sur elle: le monstre qui l'enchaîne à lui a été arrêté sur la frontière et conduit au bagne de Toulon, où il va subir sa peine.

Cet événement, qui donne une si grande portée à nos réclamations, semble cependant avoir abattu le courage de Lucie. Ce cœur si tendre a défailli d'épouvante devant l'horrible dénouement auquel l'associent les lois. Le nom qu'elle porte encore retentit en elle chargé d'infamie et de lugubres souvenirs. Son impérissable bonté est venue ajouter la compassion à tour ses maux. Puissent ses forces ne pas s'épuiser dans cette cruelle lutte! Non, je le sens, les lois ne peuvent pas être volontairement immorales et absurdes. L'évidence frappe les hommes: ils briseront ce lien odieux qui enchaîne l'être le plus pur à un forçat.

Lucie, telle que je la connais, souffrira beaucoup encore; mais diverses circonstances m'ont éclairé sur tous ses sentiments, et je n'en sacrifierai aucun à l'amour. Cette noble femme sera mère comme elle est amante. Les sacrifices qu'elle accepterait vaillamment pour elle-même, elle souffre de la pensée de les léguer à ses enfants. Puisse-t-elle trouver enfin le prix de ses douces vertus! Je rassemblerai mes forces et mon courage pour dompter mon impatience. O Roger, la vie a de rudes épreuves!

Je t'envoie une copie de ma pétition à la Chambre.

'Messieurs les Députés,

'Il existe au sein des lois un abus dont la portée est effrayante. Permettez-moi de vous le signaler par un exemple frappant.

'Une femme de vingt-deux ans, dont le cœur est pur et plein d'honneur, se trouve enchaînée par le mariage à un forçat. Quinze années de détention, l'infamie, le mépris, tout ce qui sépare la vertu du vice, annule matériellement cet odieux lien. L'homme est mort civilement; la femme, déclarée libre par les tribunaux, rentre en possession de sa fortune, qu'elle gère déjà. Tous ses droits sont évidents; et pourtant il lui faut renoncer au plus précieux de tous, celui d'user de la liberté de son cœur.

'Par une inconcevable imprévoyance des lois, cette femme se trouve expulsée de leur protection, et placée par elles entre deux abîmes, le malheur et le désordre.

'Quel choix oserait-on lui assigner? Pour se parer d'un stérile héroïsme, renoncera-t-elle à l'amour et à la maternité, ces beaux et nobles fiefs de l'épouse?

'Si l'isolement pèse comme une loi de mort sur son âme, et la pousse à contracter un lien hostile à la société, qui la protégera contre la mauvaise foi de l'opinion publique et contre tous les dangers attachés à une situation fausse?

'Entre ces deux écueils, il y en a un troisième où tombe tout être opprimé et faible, c'est la lâcheté.

'Messieurs les Députés, j'appelle votre attention sur cette question de haute morale, et je sollicite une loi qui constitue le divorce par le seul fait d'une peine infamante.'

10me Lettre.—Maurice à Roger.

Nos cœurs sont plus calmes. Lucie semble heureuse de me voir faire acte de soumission envers cette pauvre société. Puisse-t-elle recueillir le fruit de ma patience!

Peut-être ai-je véritablement accompli un devoir. J'ai tant souffert depuis quelque temps, que je peux ne plus être très-bon juge en matière de sagesse. Les abus me révoltent, et l'oppression m'inspire une telle horreur que je fuirais volontiers devant elle au lieu de la combattre. Il se peut que

Lucie, avec son héroïsme, soit beaucoup plus près que moi de la simple morale. Peu de femmes unissent, comme elle, la pénétration à la sensibilité ; elle est éminemment loyale et spirituelle. Mieux je connais ce cœur si tendre, et plus je sens que je ne saurais trop payer son amour.

Avec quelle lenteur je vois arriver chaque jour le moment qui doit nous réunir ! J'aime à la surprendre au milieu des occupations qu'elle s'est créées pour savoir m'attendre, me dit-elle. Hier, je la trouvai très-occupée à copier un gros cahier de musique insignifiante, destinée aux écoles. Comme je lui en témoignait mon étonnement avec assez d'insistance, elle finit par m'avouer qu'elle se faisait une ressource de ce travail. Je ne saurais te dire, Roger, l'impression pénible que cette découverte me fit éprouver. Le véritable rôle de la femme n'est-il pas de donner à l'homme les soins et les douceurs du foyer domestique, et de recevoir de lui en échange tous les moyens d'existence que procure le travail ? J'aime mieux voir une mère de famille peu fortunée laver le linge de ses enfants, que de la voir consumer sa vie pour répandre au dehors les produits de son intelligence. J'excepte, bien entendu, la femme éminente que son génie pousse hors des sphères de la famille. Celle-là doit trouver dans la société son libre essor ; car la manifestation est le véritable flambeau des intelligences supérieures.

Je voudrais non-seulement que les femmes trouvassent dans leurs pères, leurs frères, et leurs époux des appuis naturels ; mais que, ces appuis venant à leur manquer, elles fussent soutenues par les gouvernements. Ils fonderaient, je suppose, des établissements pour les réunir et utiliser leurs talents divers. Il y a des travaux délicats qui ne peuvent être faits que par les femmes. Ils seraient produits dans ces établissements où l'on assurerait au moins à des êtres isolés et faibles une ressource contre tous les maux qui les menacent en dehors de la vie de communauté.

Nos villes auraient alors de vastes bazars où la femme opulente se donnerait la peine d'aller choisir ses parures. On ne verrait plus de pauvres filles, exténuées par un travail forcé, obligées de courir souvent tout le jour pour en trouver le placement. Ces moyens, ou d'autres analogues, établiraient déjà un peu de proportion entre les forces et les devoirs des femmes, qui sont souvent si peu en harmonie.

11me Lettre.—Maurice à Roger.

Où trouver un reste de chaleur dans cette société lasse et démonétisée ? L'argent ! voilà la clef de leur dictionnaire, le mot qu'il faut absolument saisir pour les comprendre. J'avais fait part au comte de J. de notre situation actuelle et de ma démarche envers la Chambre. Il crut me faire fête en me réunissant à quelques-uns de ses hommes que l'on appelle sensés, sans doute parce qu'ils ont fini de démeubler le cœur au profit de la tête. Je ne croyais pas que la sécheresse pût aller aussi loin. La conversation générale de ces gens-ci ressemble à une véritable opération de bourse. Quand ils se disputent la conversion d'un naïf, c'est une chose curieuse à voir.

La manière obligeante dont le comte de J. . . . avait fait mes honneurs à son cercle me mit, malgré moi, en évidence. Forcé de parler de mes opinions et de mes sentiments, je devins aussitôt le point de mire de toute l'assemblée. Elle me battit en philosophie et en morale. Elle allait me décréter sublime pour se débarrasser de moi, quand un des hommes les plus influents de l'époque me prit à part. 'Vous ressemblez,' me dit-il, 'à une corneille qui abat des noix. Ne vous fourvoyez pas ainsi. Vous venez de heurter des

hommes qui pouvaient et qui voulaient vous servir. Rétablissez promptement vos affaires ; et croyez qu'un héros à quinze mille livres de rente n'est pas assez robuste pour marcher seul.'

Ce langage m'étonna tellement que je laissai à la puissance tout le loisir de s'étendre. 'Vous venez,' continua-t-il, 'de demander le divorce ; vous vous êtes autorisé d'un exemple assez frappant. Certes, la justice et la raison sont pour vous. Une loi restreinte, comme celle que vous demandez, passerait sans la moindre difficulté, et serait un véritable bienfait. Eh bien ! pourtant, cette loi, il y a cent à parier contre un que vous ne l'obtiendrez pas.

'C'est ma conviction,' ajouta-t-il, pendant que je réprimais avec effort une douloureuse impatience. 'La faute en est à vous, bien à vous. Vouloir jouer au géant, mépriser follement la hiérarchie, lui refuser la déférence, et explorer, pour tout appui, l'arsenal des vieux mots, n'est-ce pas prendre volontairement un rôle de dupe et courir la dague au poing dans un tir aux pigeons? Tenez,' dit-il, 'si vous n'étiez pas jeune, vous seriez fou. Mais cette infirmité-là fait tout excuser. Je vous offre donc ma protection auprès de l'ambassadeur de * * *. Vous avez du monde, une figure noble : vous pourrez vous pousser auprès de lui. Vous aimez une femme remarquable : vous lui donnerez un rang digne d'elle ; et, croyez-moi, l'amour se passe très-bien du mariage.'

En finissant sa période, mon digne Mentor me jeta un regard significatif et s'éloigna de moi. J'allai serrer la main au comte de J., si supérieur aux hommes dont il s'entoure, et je revins à Oneil la rage dans le cœur.

Roger, j'éclaircirai promptement ce que m'a dit cet homme, et s'il est vrai qu'il n'y ait plus trace de justice et d'honneur au sein de la société actuelle. Lucie est trop grande et trop pure pour s'incliner devant elle.

12me Lettre.—Lucie à Maurice.

Maurice, vous êtes noble et grand. Quel cœur peut être plus digne que le vôtre de comprendre la justice et la raison? O le meilleur et le plus généreux des hommes, vous à qui j'aurais sacrifié avec joie le repos de ma vie entière, puissiez-je vous reconnaître à quel point le vôtre m'a été cher et sacré ! Mon bien-aimé, c'est en vain que nous tenterions de lutter plus longtemps contre le sort : mon âme a achevé de se briser sous ces coups. Hélas ! quand je me suis laissée aller au bonheur de vous aimer, j'ai cru pouvoir, à mon tour, répandre du charme dans votre vie. Laissez-moi puiser mes dernières forces dans une grande et consolante pensée, en espérant que vous reverserez sur la société les flots de dévouement et d'amour qui sont en vous. Que de fois n'ai-je pas vu votre belle intelligence s'enflammer à l'aspect des plaies qui couvrent le monde ! O Maurice ! tous les sentiments généreux sont délicieux à éprouver. Quelle destinée est à la fois plus grande et plus douce que celle de l'homme utile? Ne vous souvient-il pas d'avoir souvent envié à de pauvres artisans la gloire d'une petite découverte? Vous qui pouvez bien plus qu'eux, resteriez-vous oisif? Cher et bien cher ami, vivez pour imprimer sur la terre votre noble trace. Quand un homme tel que vous apparaît au milieu de la société, il faut qu'il lui apporte son tribut de lumières et de vertus, ou qu'il se condamne au silence et à la froideur de l'égoïste. Je connais votre âme ; elle est riche et orageuse comme les nues d'un beau ciel ; jamais vous n'auriez trouvé le bonheur dans l'isolement. Ne renoncez pas aux joies de la famille ; des enfants répandront un grand intérêt sur votre existence. Vous vous plairez à développer en eux les nobles germes qu'ils tiendront de vous. Vous ferez de leurs jeunes cœurs autant

de foyers où s'épanchera la flamme du vôtre. Ils vous entoureront de respect et d'amour. O Maurice! toutes les félicités de la vie ne se résument-elles dans ce seul mot?

Dernière Lettre.—Le Docteur L. au Docteur B.

Mon vieil ami, j'approuve beaucoup le parti que vous prenez de vous soigner à votre tour. Pour nous, qui croyons au bien, c'est un douloureux spectacle que celui de cette société en désordre, où rien de ce qui est noble et grand ne peut plus se faire jour. Je viens encore d'être témoin d'un de ces sacrifices qui révoltent le cœur et la raison. L'infortunée jeune femme dont je vous ai écrit l'histoire, s'est éteinte hier entre mes bras, brisée par des douleurs que je renonce à vous peindre. L'homme qu'elle aimait ne lui a survécu que quelques instants: il semble qu'il ait voulu savourer son désespoir. En vain j'ai tenté de le ramener à la raison et au calme: il s'est brûlé la cervelle auprès du lit funèbre, avant que j'ai pu prévenir son funeste dessein.

Ceux qui ont connu la femme intéressante et malheureuse, dont je déplore la perte, comprendront la fatale passion qu'elle inspira. C'était une de ces organisations si rares où le cœur et l'esprit ont part égale. Nulle femme ne sentait mieux qu'elle la grandeur de son rôle. Elle eût été une mère et une épouse accomplie. Hélas! en la voyant s'éteindre entre mes bras, dans l'âge où l'on doit vivre, j'ai douloureusement apprécié le peu de pouvoir qui est donné à l'homme pour réparer le mal qu'il produit.

Clotilde de Vaux.

2. LES PENSÉES D'UNE FLEUR.

Je nais pour être aimée: oh! merci, bon destin!
Que les puissants mortels contre toi se déchaînent!
Aux pieds de tes autels que les vents les entraînent,
J'ai mes parfums et mon matin.

J'ai le premier regard du roi de la nature,
J'ai son baiser de feu, sa splendeur pour parure:
J'ai de la jeune Aurore un sourire de sœur;
J'ai la brise naissante et la douce saveur
De la goutte penchée au bord de mon chalice.
J'ai le rayon qui joue au seuil du précipice;
J'ai le tableau magique, en grandeur sans pareil,
De l'univers s'ouvrant les portes du réveil.

Jamais le froid mortel ne doit tarir ma vie;
Au sein des voluptés doucement je m'endors:
La nature me garde et me rend ses trésors;
A son banquet d'amour je m'éveille ravie.

J'ai bien souvent embelli la beauté;
Sur un cœur pur mon pur éclat rayonne:
Le plaisir me tresse en couronne,
Et le bonheur m'attache à son côté.

Quand le rossignol s'inspire
Sur ma tige en se jouant,
Pour laisser résonner son chant
La nature entière expire.

L'amour me dit tous ses secrets;
J'abrite ses douces prières,
J'aide au bonheur de ses mystères;
Je suis la clef des cœurs discrets.

O doux destin, si les soupirs profanes
De tes décrets pouvaient changer le cours,
Seule ici-bas, dans mes langes diaphanes,
Je renaîtrais au souffle des amours.

Des sombres tempêtes
Sauve-moi l'horreur;
Que toujours la fleur
Sourie à tes fêtes!

CLOTILDE DE VAUX.

3.

Letter on Social Commemoration, philosophically considered, composed for Madame Clotilde de Vaux on the occasion of her birthday, by the author of the Positive Philosophy.

Paris, Monday, June 2, 1845.

MADAM,

I attach great importance to being considered by you as not less free from irreligious or metaphysical prejudices than from purely theological ones. As a fact, this has long been my position. But perceiving lately that you still had grave doubts on the subject, I secretly promised myself that I would take advantage of a happy anniversary to remove them. To-morrow is the festival of Ste. Clotilde, your patron saint; permit me then, Madam, following a touching and universal custom, to join your family in offering you, in my own way, a special mark of affectionate remembrance. The general reflections which this highly-prized occasion leads me briefly to lay before you, will, I hope, enable you to form just ideas as to the eminently social character of a philosophy which, though you may not as yet have directly examined it, has for some time past been much talked about in your circle.

The instinct of Sociability, or the habitual consciousness of the bond uniting each individual to his kind, would be very imperfectly developed were this bond limited to the Present, as it is in the more sociable animals, to the exclusion of the Past and even of the Future. It is the continuous co-operation of successive generations which specially characterises Human Society, and this co-operation is the primary source of the evolution peculiar to our species. Thus the several social states have produced, each

in its own way, some special and permanent institution or institutions, at first spontaneous, but gradually becoming more and more systematic, peculiarly calculated to mark this connection, by linking its own time to previous ones by a regulated veneration for its ancestors, both of the state and of the family. Antiquity had at its disposal powerful resources in this respect, in harmony with the nature of its opinions and the character of its civilisation. This cherishing of memories often became intensified till it reached the point of apotheosis, which it would be most unjust to judge solely by its monstrous abuse in decaying paganism. Still its efficacy could only be really great during its earliest ages, nor could it be extended to the lower castes, owing to the immovable and aristocratic spirit of all the ancient societies. All the higher divine offices having been promptly filled up in the first organisation of polytheism, the newer gods, without special department, whom official gratitude elevated in numbers to that rank, could seldom be of any real importance, even when some ancient office was broken up and divided amongst them.

When monotheism, acting in the spirit of its doctrine, substituted a simple beatification for the apotheosis of antiquity, it, especially in its Christian form, introduced a real and great improvement into this essential part of every social organisation. Although this necessary substitution was a less powerful stimulant to the personal desires of a glorious immortality, yet by throwing this prize open to all ranks, the field of those desires was greatly widened. For instance, you are aware, Madam, that both your noble namesake and her humble contemporary, Ste. Genevieve of Nanterre, became almost simultaneously the objects of a worship, to say the least, equal. This extension to all of the principle of consecration enabled Catholicism, long the chief organ of social progress, to introduce a great improvement in this direction by connecting private with public life. The institution, too little understood, of baptismal names, offered to each one, not merely the free choice of a special patron, but also a noble model for personal imitation. If, in the inevitable decay of theological beliefs, it has gradually lost the first of these privileges, nothing can ever deprive it of the second. Springing from the very essence of our nature, it will promptly reappear under inspirations both more systematic and more durable, as soon as the reorganisation of man's principles and feelings shall have put an end to the deplorable anarchy which marks our times.

This philosophic letter, Madam, would degenerate into a very misplaced treatise were I to develop more fully the preceding hints. But these are sufficient to enable your rare sagacity to see, without going into detail, how it is that the positive philosophy fully justifies this Catholic worship of saints, viz., by referring it to its social purpose, fulfilled under Catholicism in forms adapted to that stage of Humanity. Never will it be otherwise than a highly social custom to celebrate periodically the memory of our worthy predecessors, as to enjoin formally on each of us the adoption of some one of them as a model for our own conduct. True philosophers justly deplore, in this respect as in so many others, the discredit into which these useful practices have fallen, from their being unfortunately considered inseparable from doctrines destined to perish as a consequence of their proved incompatibility with the continuous development of our intelligence and of our social instincts.

As to the special case which has led me, Madam, to point out to you these general views, I could not wish for one better calculated to confirm

them. In the days of its decline, Christianity, as Paganism before it, though in a much less degree, often abused the high office of public consecration which had fallen to it. But the remark in no way applies to your ancient patroness, who is in every point one of the best examples of Catholic canonisation. The Roman Church was right in looking on the conversion of Clovis as more influential than that of any other royal personage except Constantine, in reference to the social development, not merely of France, but of the whole of the Western Republic. Now that the gentle influence of the amiable Clotilde aided the high political reasons which determined that great event is incontestable; her long and peaceful widowhood was no less nobly devoted to moderating the fierce quarrels of her sons. Such a consecration, merited by so many eminent qualities, moral rather than intellectual, constitutes in my opinion one of the types best calculated to set forth the permanent social office of woman—the moralisation of the spontaneous government of material force by the intervention of feeling. Do not then be surprised, Madam, that I can, in my own way, cordially join with all those who, under whatever forms, will celebrate to-morrow this interesting memory; no one, I venture to say, will appreciate it more thoroughly than I shall. When the new School of Philosophy shall accomplish the enlightened mission and systematic rectification of the Roman Catholic Calendar, your beloved namesake will find a recognition of her eternal claims to the gratitude of Humanity.

In general, Madam, be assured that the essentially Positive Philosophy of the nineteenth century does not come to destroy, as the purely negative philosophy of the last century was compelled to do. Its object is always to construct, as the final outcome of all previous labours, an order at once firm and progressive, in fullest conformity with the whole of our nature, personal and social. When its relative spirit and its organic tendency are sufficiently known to you, you will understand this admirable superiority which enables it, for the first time in history, to combine in one harmonious and homogeneous doctrine all that the different previous states of man have offered of grand or of useful. Everywhere it separates the permanent office which constituted the fundamental purpose of each institution, from the provisional forms which in their turn corresponded and must correspond to the different ages of Humanity, thus bringing to light in each case the final mode which will henceforth prevail without disguise. In a word, this new philosophy alone fully represents the collective existence of our species. The destined progress of that species is its peculiar subject, one that no theology, and still less any metaphysical system, could embrace. Until now, in fact, the various religions have had nothing higher than a purely personal end to set before each man; viz. eternal salvation, in which society at large had no part, except as a means, or at best as a condition, without any progressive destination peculiar to itself as a collective existence. Still, during the long infancy of Humanity, the wisdom of the priesthood, the expression of the instinct of mankind, made its imperfect constructions of great use socially, in a way that Positivism explains and defines. But such uses being only provisional, although indispensable, could not preserve these constructions from the irrevocable discredit into which they gradually fell, as the progress of the human evolution undermined at once the respect they had previously commanded from the intellect, and their moral influence. The names in use, which yet recall their former power to bind together our ideas and our feelings, now seem, as applied to theological beliefs, only to

convey ideas of bitter irony. For, during the last three centuries at least, far from tending to unite men, these beliefs have obviously degenerated into the most fertile sources of divergences, private as well as public. This degeneration has followed, first, from their diminished power of protecting those social truths of which they were the confused expression; and secondly, from their inherent tendency to develop almost infinite divergence, henceforth incompatible with any permanent system of active convictions.

Do not doubt then, Madam, that when real conceptions have become sufficiently general, and daily they gain ground, they will be found better adapted to all noble human purposes than any chimerical ones. With regard to the important subject touched on in this letter, there is indisputably a spontaneous tendency in Positivism to honour every kind of nobility of character, by a sound appreciation of the part each has taken in the fundamental evolution of Humanity. When our modern habits and feelings shall have had time to develop themselves fully on the basis of right principles, the system of commemoration will be found to have made as great a stride towards general perfection as that accomplished by the substitution of Catholicism for polytheism. For the Catholic régime was at once too absolute and too narrow ever to fulfil satisfactorily this great social office. All that had existed before it, and all that it could not embrace, was included by it in a blind reprobation. Even within its own bosom it could not embrace those types of character which had not been foreseen and accepted by its unalterable formulæ. To give an instance, have you never noticed, with surprise and indignation, the strange omission from our theological calendars of the heroic maiden who saved France in the fifteenth century?

The more thoroughly you examine this great subject, the more convinced will you become, Madam, that the régime of the new philosophy is the only one which can simultaneously pay honour to all ages, all places, all social conditions, all forms of co-operation, private as well as public; giving strength and vigour to the sense of human continuity, it will enlarge the sphere of its influence and raise the character of that influence by an habitual consideration of the future—a conception the previous régime was unable to take in, from its ignorance of the general law of social progress. The worship of the dead will become even more popular than under Catholicism; for the humblest co-operator will have his part in the sum of an universal convergence, and this to the exclusion of all the ungrounded distinctions between public and private spheres. Every really honourable life may lawfully aspire to some solemn commemoration, whether in the bosom of his family, in his city, the state, his nation, or finally, by the whole race.

From whatever point we look at it, what spirit can be more social, Madam, than the spirit of thorough Positivism; for it alone embraces the whole of man's existence, individual and collective? The three co-existent modes of our existence, thought, feeling, and action, are therein directly harmonised to the fullest possible extent, by a principle equally applicable to the individual and to the race. They are respectively the subjects of our three great and continuous creations, philosophy, poetry, and politics. The first, Philosophy, accomplishes the direct systematisation of human existence, by establishing, between all forms of thought, a fundamental correspondence, the basis of the social order. The second, Poetry, gives beauty and dignity to that existence by the highest idealisation of our

various sentiments. Lastly, the social art of Politics, of which morals constitute the principal branch, determines all our actions, public and private. Such is the thorough solidarity between the three great aspects of human life, the speculative, the affective, and the active, as represented by Positivism. It regards our existence, whether individual or collective, as having for its constant object the universal amelioration in the first place of our external conditions, and then of our own nature, physical, intellectual, but above all, moral.

My letter, Madam, is already very long, but I cannot end it without inviting your attention to the peculiar attraction which this new philosophy, when sufficiently known, must have for your sex.

The Positive School of Philosophy places the spiritual reorganisation in the first rank of importance, abandoning altogether therefore all fruitless political agitation. It will secure a preference for the direct regeneration of opinions and morals, over that of mere institutions; the construction of which can only be the consequence, not the cause, of the spiritual change. Now such a radical transformation of the present useless discussions, would assuredly be very favourable to the influence of women; whether we consider the laws of their own nature, or of the general order. The intervention of woman, introduced in so noble a form by the Middle Ages, seems to have nearly died out with them. Now the individual instances of rebellion against a really fundamental order which our modern theories occasion, are but ill calculated to resuscitate this indispensable influence. The spiritual system of Positivism can alone now rightly develop it. Instead of cherishing vain longings for the past, your sex should see in it simply a kind of historical foreshadowing of the higher office which must be its lot in the true human future. For, in the steady course of human progress, moral influences become more and more predominant over material forces. And the connection between the spiritual influences—the moral and the intellectual—has always secured the sympathies of woman for the mental advance of Humanity in each of its several stages. In fact, this connection was evident at the very first systematic manifestation of the positive philosophy, arising under the powerful impulse of Descartes, which met with such a ready welcome from your sex. The ladies of the nineteenth century will not fall short of their predecessors, when this philosophy, which in Descartes' time was in nowise social, has reached its full maturity. From this time forward its principal domain will lie precisely among those subjects which by their nature occupy continually the first place in the affections of your sex and the thoughts of my own.

In the daily conflict of forces which sets human affairs in motion, women are, from their peculiarly affective organisation, habitually disposed to second the moral influence exerted by the speculative over the active power. Their peculiar social position, as passive, yet by no means indifferent, spectators of the practical movement, of itself constitutes them the close allies of each spiritual power as against the temporal power of the period. Now this natural affinity will be more powerfully developed by the new moral régime to which our modern societies tend, than by the ancient one. How then will it be possible for your sex to refuse its adherence to a doctrine which makes the adoration of woman a necessity? The noble chivalry of the Middle Ages, hampered as it was by theological beliefs, was never able to raise this worship above the second rank. When the chivalry of modern

times shall have attained its true character, it is before woman only that man will bend the knee.

I trust that the importance of these general indications will be my excuse for their length, both before the tribunal of your understanding and of your heart. They will at least attain their chief end by saving you the trouble of studying long treatises in order to gain a better knowledge of the philosophic and social teachings of the new school. Though the offspring of the French revolution, you see that it differs profoundly from all purely revolutionary schools. These are still seeking to destroy, not to build up, unaware that the needful clearance of rubbish has long since been accomplished. The positive doctrine is more radically opposed to any backsliding towards theology than any metaphysical influence. But this opposition is rather an accessory than a principal object, and it pursues it by offering a more perfect satisfaction of all the requirements, intellectual and social, which invested the earlier régime with its power, while it explains with equal facility the rise and fall of that power.

Henceforward the memory of your gentle patron saint will be yet more dear to me. I shall owe to it a much-prized occasion of bringing home to your feelings the moral strength of Positivism. You see that, steering clear of all foolish eclecticism, the new universal régime gathers round it whatever of noble or useful is to be found in the previous ages of Humanity. But it wisely lets drop those passing forms which, indispensable as they were as the bases of the institutions of the time, afterwards lost their social power. It is this social power which the new school is constantly strengthening and perfecting.

Be pleased, Madam, graciously to accept the sincere wishes which are this day offered with especial fervour by

Your respectful friend,

AUGUSTE COMTE.

END OF THE FIRST VOLUME.

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